S. Hrg. 101-153

TO ASSESS PAPERWORK REQUIREMENTS OF OSHA'S HAZARD COMMUNICATION STANDARD

HEARING

BEFORE THE

COMMITTEE ON SMALL BUSINESS
UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

FIRST SESSION

TO ASSESS PAPERWORK REQUIREMENTS OF OSHA'S HAZARD COMMUNICATION STANDARD

JUNE 22, 1989

Printed for the use of the Committee on Small Business

U.S. GOVERNMENT PRINTING OFFICE

20-455 WASHINGTON : 1989

S721-9

For sale by the Superintendent of Documents, Congressional Sales Office
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TO ASSESS PAPERWORK REQUIREMENTS OF OSHA'S HAZARD COMMUNICATION STANDARD

THURSDAY, JUNE 22, 1989

U.S. SENATE,
COMMITTEE ON SMALL BUSINESS,
Washington, DC.

The Committee met, pursuant to notice, at 9:50 a.m. in room SR-428A, Russell Senate Office Building, Hon. Dale Bumpers (Chairman of the Committee) presiding.

STATEMENT OF HON. DALE BUMPERS, A U.S. SENATOR FROM THE STATE OF ARKANSAS

The CHAIRMAN. The Committee will come to order.

I apologize to all of our witnesses for being late. We just had our first grandchild and between having a grandchild and keeping my tomatoes tied up and the traffic, I have a hard time getting places on time. So, I will just insert my statement in the record and say that we are most honored.

Congressman Sisisky?

Mr. SISISKY. That is correct.

The CHAIRMAN. Congressman Sisisky is vitally concerned with this item. We are delighted to have you with us. Please proceed.

[The prepared statements of Senators Bumpers, Boschwitz, Dixon, Grassley, and Wallop follow:]

Statement of Senator Dale Bumpers
Committee on Small Business
June 22, 1989

I have called this morning's hearing to examine the problems small businesses are facing in their attempts to comply with the Hazard Communication Standard, which is the major regulation on worker safety promulgated by OSHA. The original Standard applied only to the manufacturing sector, but the Third Circuit Court of Appeals in 1987 ordered that the rule be expanded to cover virtually all businesses. The Small Business Administration has estimated that 4.7 million employers and 70 million employees are covered. I hope our witnesses will provide insight into the problems which prompted the rule as well as suggestions on how the Standard can be made workable and fair to both employers and employees.

We understand that the court decision forced OSHA to act quickly. However, there was clearly evidence that the regulations would be expanded before the Court issued its decision. It is not clear that OSHA made a real attempt to understand the day-to-day workings of American businesses and the special hardships these regulations would have on small businesses as is required under the Regulatory Flexibility Act. The manufacturing industries for which the regulations were originally intended are a far cry from the small hardware store I operated in Charleston, Arkansas.

It should be noted that the Hazard Communication Standard was originally proposed by the Reagan Administration in lieu of a labeling requirement for toxic chemicals which had been put forward by the Carter Administration. The question arises whether the Hazard Communication Standard is as effective in protecting workers as labeling would be, and whether the rule is practical or manageable for small companies.

Contempt for the federal government is an ageless right and practice. The promulgation of regulations that are often

confusing and burdensome, and therefore may not be fully implemented in the workplaces of this nation, increases cynicism toward government. It invites further contempt for both the Congress and the federal agencies, which, by the way, are not covered by the Hazard Communication Standard.

It is certainly not my intention to see the entire Hazard Communication Standard overturned, nor to exempt small businesses from safe workplace requirements. Enhancing worker health and safety is not only humane, but the vast majority of employers are fully aware that it is good business. But businesses that do not know of the standard or do not fully understand their duties under the regulations and ways of minimizing dangers will not implement it. Congressman Sisisky held a hearing in the House a few months ago on this topic. I am especially anxious to learn whether OSHA has made any attempts to fine-tune these regulations since that hearing.

I hope OSHA will take note of the testimony, including the recommendations that will be offered here today.

JULY 22, 1989

STATEMENT OF SENATOR RUDY BOSCHWITZ

SB COMMITTEE HEARING ON OSHA HAZARD COMM. STANDARD

MR. CHAIRMAN, I COMMEND YOU FOR CALLING THIS HEARING TO EXAMINE AN ISSUE WHICH IN MY VIEW IS OF MAJOR IMPORTANCE TO THE SMALL BUSINESSES OF THIS COUNTRY. THE TESTIMONY OFFERED THIS MORNING WILL PERHAPS HELP CRYSTALLIZE HOW WE AS MEMBERS OF THIS COMMITTEE OUGHT TO RESPOND TO THE BURDENS IMPOSED ON SMALL BUSINESSES BY OSHA'S HAZARDOUS COMMUNICATION STANDARD.

MR. CHAIRMAN, I WOULD SUGGEST TO THE COMMITTEE THAT THIS ISSUE IS ANALAGOUS IN TERMS OF ITS IMPACT ON SMALL BUSINESSES TO SECTION 89 OF THE TAX CODE. BOTH DIRECTIVES EMINATE FROM THE MOST NOBLE OF INTENTIONS. NO THOUGHTFUL INDIVIDUAL WOULD OBJECT TO EXPANDING HEALTH AND WELFARE BENEFITS TO MORE AMERICAN WORKERS. LIKEWISE, NO ONE WOULD RESIST EFFORTS TO INFORM AND TRAIN WORKERS TO AVOID EXPOSURE TO HARMFUL SUBSTANCES. BUT AS WAS THE CASE WITH SECTION 89, WHAT HAS EMERGED AS A PROPOSED COURSE OF ACTION WITH REGARD TO HAZARDOUS COMMUNICATION IS OUTSIDE THE REALM OF WHAT IS SENSIBLE AND PRACTICAL.

IN TESTIMONY BEFORE THE HOUSE SMALL BUSINESS SUBCOMMITTEE ON EXPORTS, TOURISM, AND SPECIAL PROBLEMS, THE SMALL BUSINESS ADMINISTRATION OFFICE OF ADVOCACY TESTIFIED THAT "THIS RULE IS THE LARGEST COMPREHENSIVE REGULATORY SCHEME ATTEMPTED BY THE DEPARTMENT OF LABOR." THE TESTIMONY WENT ON TO SAY THAT THE RULE "WILL AFFECT AS MANY AS 4.5 MILLION EMPLOYERS, UP TO 70 MILLION WORKERS AND, DEPENDING ON WHOSE ESTIMATE YOU USE, COST AMERICAN BUSINESS BETWEEN $687 MILLION AND $2 BILLION IN COMPLIANCE COSTS FOR THE FIRST YEAR."

WHETHER YOU CHOOSE TO DISPUTE THE VALIDITY OF VARIOUS PROJECTED COMPLIANCE COSTS, THE FACT REMAINS THAT THE COMPLIANCE PROCESS UNDER THE REGULATION WILL BE EXCEEDINGLY COSTLY FOR SMALL BUSINESSES. MOREOVER, I BELIEVE THE RULE IS UNWORKABLE IN CURRENT FORM AND ULTIMATELY WILL FAIL ITS MISSION TO INFORM THE WORKPLACE ABOUT THE HAZARDS OF CERTAIN MATERIALS. THE COMPLEXITY OF THE MATERIAL DATA SAFETY SHEET PROCESS MAKES ANY MEANINGFUL COMMUNICATION UNLIKELY.

MR. CHAIRMAN, THE CURRENT SYSTEM IS NEITHER WORKABLE NOR EFFECTIVE. MY HOPE IS THAT BY EXPLORING THE DIMENSIONS OF THE PROBLEM THIS MORNING WE WILL BE ABLE TO FRAME THE ISSUE IN SUCH A WAY THAT WORKABLE AND APPROPRIATE METHODS OF COMPLYING WITH THE STANDARD COME TO LIGHT. I THANK THE CHAIR.

JUNE 22, 1989

STATEMENT BY ALAN J. DIXON

SMALL BUSINESS COMMITTEE

HEARING ON OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S HAZARD COMMUNICATION PAPERWORK REQUIREMENTS

MR. CHAIRMAN, WE ARE HERE TODAY TO REVIEW THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S (OSHA) HAZARD COMMUNICATION STANDARD. I COMMEND THE CHAIRMAN FOR HOLDING THIS HEARING. THIS SESSION WILL PROVIDE THE COMMITTEE THE OPPORTUNITY TO EXAMINE THE REGULATIONS CURRENTLY IN PLACE, AND TO ASSESS THE IMPACT OF THE REGULATIONS ON SMALL BUSINESSES ACROSS THE NATION.

THE INTENT OF THE HAZARD COMMUNICATION STANDARD (HAZ-COM) WAS TO INSURE THAT EMPLOYEES WERE INFORMED OF THE POTENTIAL RISKS ASSOCIATED WITH HANDING HAZARDOUS CHEMICALS IN THE WORKPLACE. THE GOAL OF LIMITING HEALTH AND SAFETY RISKS IS LAUDABLE. IT SEEMS THAT IN THE REGULATORY PROCESS, HOWEVER, THAT GOAL HAS BEEN LOST. ONCE AGAIN, WE MUST GUARD AGAINST THE PROPENSITY OF THE GOVERNMENT TO HEAP PAPERWORK BURDENS ON LARGE AND SMALL BUSSINESSES ALIKE.

ALONG WITH MY COLLEAGUES, I DO NOT WANT TO SEE HEALTH AND SAFETY REGULATIONS TOTALLY REMOVED. I BELIEVE IT IS VERY IMPORTANT TO DO WHAT WE CAN TO INSURE THAT ALL EMPLOYEES, WHETHER IN OFFICES OR ON THE ASSEMBLY FLOOR, HAVE A SAFE AND HEALTHY ENVIRONMENT TO WORK IN. HOWEVER, I ALSO BELIEVE THAT THE COMPLEX SYSTEM IN PLACE NEEDS TO BE REEVALUATED TO DETERMINE WHETHER AN ALTERNATIVE IS AVAILABLE. WE MUST STOP IMPOSING BURDENSOME REGULATIONS WHEN THE COST AND DIFFICULTY OF COMPLYING HAS NOT BEEN ASSESSED. THIS CASE DEMONSTRATES THE IMPORTANCE OF AGENCY COMPLIANCE WITH THE PROTECTIONS OF THE PAPERWORK REDUCTION ACT. I INTEND, IN MY CAPACITY AS CHAIRMAN OF THE PAPERWORK REDUCTION AND GOVERNMENT CONTRACTING SUBCOMMITTEE, TO EXPLORE HOW THE PAPERWORK REDUCTION ACT CAN BE STRENGTHENED, IF NEED BE, TO INSURE THAT ALL AGENCIES RECOGNIZE AND COMPLY WITH ITS DIRECTIONS.

I AM ANXIOUS TO HEAR FROM OSHA AND THE SMALL BUSINESSES BEFORE US. I HOPE THAT OSHA WILL GAIN INSIGHT INTO THE BURDENS THE HAZ-COM REGULATIONS HAVE CREATED. FURTHER, I HOPE THIS HEARING WILL PROVIDE THE OPPORTUNITY FOR OSHA TO FORMULATE A CREATIVE METHOD TO SIMPLIFY AND CLARIFY THE REGULATIONS, YET STILL REALIZE THE GOAL OF INSURING THAT ALL WORKPLACES OFFER THE HEALTHY ENVIRONMENT WE ALL DESIRE. THANK YOU, MR. CHAIRMAN.

STATEMENT OF SENATOR CHARLES E. GRASSLEY AT A HEARING OF THE SENATE COMMITTEE ON SMALL BUSINESS ON THE SUBJECT OF OSHA'S HAZARD COMMUNICATION STANDARD.

THANK YOU, MR. CHAIRMAN.

I AM GLAD YOU HAVE CALLED THIS HEARING.

I AM GLAD BECAUSE QUITE A BIT OF CONCERN HAS BEEN EXPRESSED TO ME BY SMALL BUSINESSPEOPLE IN MY STATE ABOUT OSHA'S HAZARD COMMUNICATION STANDARD.

I AM INTERESTED IN FINDING OUT MORE ABOUT WHAT THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION IS DOING TO HELP SMALL BUSINESSES AROUND THE COUNTRY COMPLY WITH THE STANDARD.

I AM AWARE THAT IT IS ALLEGED BY MANY INTERESTED PARTIES THAT OSHA IS NOT DOING ENOUGH ALONG THOSE LINES.

PERHAPS THOSE OF US WHO ARE MEMBERS OF THIS COMMITTEE CAN HELP LIGHT A FIRE UNDER OSHA TO GET THEM TO DO MORE.

I AM INTERESTED IN FINDING OUT ALSO AT THIS HEARING WHETHER THE STANDARD ITSELF, AND NOT JUST OSHA'S ADMINISTRATION OF IT, NEEDS MODIFICATION. I APPRECIATE THE FACT THAT THIS IS A CONTROVERSIAL QUESTION. THERE ARE THOSE WHO SUPPORT THE STANDARD JUST THE WAY IT IS AND DON'T WANT IT CHANGED.

BUT THERE APPEAR TO BE MANY OTHERS WHO BELIEVE THAT IT MAKES UNREALISTIC AND REALLY UNNECESSARY DEMANDS ON A LARGE PERCENTAGE OF SMALL BUSINESSES.

I DON'T THINK VERY MANY PEOPLE WOULD DISAGREE WITH THE PROPOSITION THAT EMPLOYERS SHOULD BE RESPONSIBLE FOR INSURING THAT THE WORKPLACE IS SAFE FOR EMPLOYEES. THE QUESTION IS WHETHER THE STANDARD DOES THAT ADEQUATELY, OR WHETHER, INSOFAR AS WHAT IT DOES REQUIRE IS CLEAR AND UNAMBIGUOUS, IT GOES TO UNNECESSARY LENGTHS IN ORDER TO INSURE THE SAFE WORKPLACE THAT I THINK ALL OF US WANT.

I HOPE THAT YOUR HEARING CAN HELP CLARIFY WHETHER THE CONGRESS SHOULD TAKE A BIGGER HAND IN THIS MATTER THAN IT HAS TO DATE.

STATEMENT BY SENATOR MALCOLM WALLOP
REGARDING OSHA'S HAZARD COMMUNICATION STANDARD
BEFORE THE SENATE COMMITTEE ON SMALL BUSINESS
THURSDAY, JUNE 22, 1989

I appreciate your bringing the issue of OSHA's Hazard Communication Standard to the committee's attention, Mr. Chairman. I look forward to hearing the testimony today on the impact of this regulation on small business nonmanufacturers. Today's witnesses should provide some guidance and creative suggestions on possible alternatives or solutions to this rather misguided regulation.

It is my understanding that those in nonmanufacturing industries are not necessarily opposed to the intent of this regulation -- which is to ensure that health and safety risks in the workplace are limited -- but would merely like to see it simplified. After reviewing the record from the hearing held last year by the House Small Business Subcommittee on Exports, Tourism and Special Problems, I can easily see why small businesses have had a difficult time trying to comply with the standard.

The compliance requirements for employers are not only excessive, but are time consuming and costly. In addition to identifying and training employees about the possible hazards of chemicals used in the workplace and what to do in emergency situations, an employer must create and maintain a written hazard communication standard program and obtain and keep updated material safety data sheets for each and every chemical. These material safety data sheets (MSDSs), I might add, are much more difficult to understand than labels which are already required on hazardous chemicals. I have also heard complaints that a number of small businesses either hire a new employee just to deal with the intricate aspects of the MSDSs or they spend an inordinate amount of time plowing through the paperwork themselves.

If we gain anything from this hearing today, I hope it will be a commitment from both the Occupational Safety and Health Administration and the Small Business Administration to work together to forge a more rational regulation. While the court ordered OSHA to issue, within 60 days, a standard applicable to all workers covered by the OSHA Act, the magnitude or sweep of the resulting regulation was quite underestimated -- as was admitted by the Deputy Assistant Secretary of OSHA, Frank White. Although the SBA's Office of Advocacy was not successful in getting OSHA to comply with the Regulatory Flexibility Act, perhaps Frank Swain's testimony will shed some light on what recommendations his office made to OSHA to make this standard less burdensome on small businesses.

To complicate matters, Mr. Chairman, it would appear that we have an outreach problem. I recently spoke with the Technical Assistance Division Manager, Joe Borghi, at Wyoming's Occupational Health and Safety Commission, about this hazard communication standard. Mr. Borghi tells me that although his office has done a number of media promotion spots to inform small businesses about this standard, he would estimate that about 90 percent of the people he comes in contact with know nothing of the standard or the penalties for noncompliance. It would appear that unless you are a member of a trade association or you subscribe to the Federal Register, that very few small businesses know about the standard. Since OSHA does not have a small business ombudsman like the EPA, perhaps OSHA's representative, Mr. Carey will tell us what outreach efforts they have made to date and what further plans they have to familiarize small businesses with the standard and assist them in their compliance efforts.

Again, Mr. Chairman, thank you for holding this hearing today. I believe the hearing is very timely and a great opportunity for small businesses to raise the problems they are having in complying with the standard. Their recommendations as to how we might put together a standard which is less cumbersome and easier to comply with should be helpful. I stand ready to assist in that effort.

I have a few questions for some of today's witnesses which I'd like to submit for the record at this time.

STATEMENT OF HON. NORMAN SISISKY, A U.S. REPRESENTATIVE FROM THE STATE OF VIRGINIA

Mr. SISISKY. I would ask that my total statement be placed in the record. Thank you for inviting me to be here this morning to comment on a subject of critical importance to small business, the Hazard Communications Standard.

As you said, I am Norman Sisisky, and I Chair the House Small Business Committee on Exports, Tax Policy and Special Problems. As you may be aware, I held hearings on this issue last September.

The Hazard Communication Standard regulates how employers and employees handle hazardous chemicals to limit the risk to their health and safety. There are approximately 575,000 different chemical products used today in American business and industry. Many of these chemicals can cause serious illness or injury if employees are improperly exposed to them.

In 1983, OSHA originally promulgated a Hazard Communication Standard [HazCom], to protect workers in the chemical industry. The standard was expanded in 1987 to apply to all businesses. The standard now requires that all chemicals used in the workplace be evaluated for possible health and safety risks. Any potential hazard associated with a chemical must be communicated to employees through container labeling, Material Safety Data Sheets, which are called MSDSs, and employee training.

I want to make clear that I am not opposed to the Hazard Communication Standard, nor, might I add, are the businesses, trade representatives, and label organizations that testified before my Subcommittee. Everyone—and I must emphasize this—everyone agrees that informing employees of potential workplace hazards is a matter of paramount importance.

However, I do not see how this standard efficiently and effectively achieves this goal. In fact, it seems to me as if the regulators created a complex, expensive, and unruly system wherein worker education is not as important as the paperwork requirement.

According to the Office of Management and Budget, the Hazard Communication Standard ranks as the sixth greatest paperwork-intensive requirement ever developed in this Nation.

More importantly, the Material Safety Data Sheets, which make up the bulk of the paperwork burden, do not accomplish what they are intended to do.

Some of the complaints voiced before my Subcommittee by both business and labor organizations about the Material Safety Data Sheets are that the data sheets are highly technical, they are difficult for the average person to understand—I might add, they are difficult even for me to understand. In addition, the data sheets are costly to distribute, they are unclear, poorly written, and provide inadequate or incomplete information.

Furthermore, many employers are concerned that the data sheets they are using may not be current or accurate. Although OSHA has made little effort to educate businesses about what the Government expects, a $10,000 fine can be levied for failure to abide by the standard.

My Subcommittee heard from a pharmaceutical distributor who complained that his business must maintain 1,500 to 2,000 MSDSs

on file to meet the requirements of the standard. They further testified that to comply they will have to spend some $16 million to send out 10 million MSDSs to their 1,000 customers.

We also heard from a wholesale flower distributor who had to hire an additional full-time employee just to keep track of the paperwork caused by the standard.

Mr. Chairman, these are just two examples. You can begin to understand how truly monumental this problem is.

I am also struck by the inevitable practical problems associated with complying with the standard. For instance, must every truck driver keep MSDS's on board the truck for every possible delivery? If so, I am sure you will find that they will be put behind the seat and coffee or soft drinks will be spilled on them. I am sure that pages will end up missing or that something will happen to them.

In short, Mr. Chairman, for all it will cost small businesses to produce, copy, and distribute these data sheets, what will we have? We will have crumpled up pieces of paper and the driver probably will not even know which piece of paper goes with which product. I do not think this is the way to protect American workers.

I was also shocked to hear that the AFL-CIO criticized OSHA before my Subcommittee. The AFL-CIO is rightly concerned about a standard this far-reaching which relies on the private sector to develop and implement the required user outreach and employer education program.

After my hearing, I was pleased to learn that OSHA had finally taken some steps to help businesses implement the standard. OSHA has recently completed an information booklet that explains the standard and its requirements.

I am convinced that MSDSs are not the most efficient method of informing workers about possible workplace hazards. The current MSDS system imposed by OSHA is unwieldy at best. OSHA does not control MSDS content or distribution. It is left to the individual chemical manufacturers to produce and distribute the data sheets.

Mr. Chairman, I have some more, but in the interest of time, because I have to vote in the House Democratic Caucus, I will conclude my testimony. However, I think you are going to hear some very interesting testimony, and you are going to really hear how America works today.

[The prepared statement of Hon. Sisisky follows:]

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STATEMENT OF
CONGRESSMAN NORMAN SISISKY
BEFORE THE SENATE SMALL BUSINESS COMMITTEE
JUNE 22, 1989

Thank you Senator Bumpers for inviting me this morning to comment on a subject of critical importance to small business--the Hazard Communication Standard. I am Norman Sisisky, and I Chair the House Small Business Subcommittee on Exports, Tax Policy and Special Problems. As you may be aware, I held hearings on this issue last September.

The Hazard Communication Standard regulates how employers and employees handle hazardous chemicals to limit health and safety risks. There are approximately 575,000 different chemical products used today in American business and industry. Many of these chemicals can cause serious illness or injury if employees are improperly exposed to them.

Let me take a moment and give a brief history of the standard. In 1983, OSHA promulgated a Hazard Communication Standard (HAZ-COM) that applied to chemical manufacturers and importers. The purpose of the standard was to better inform employees of the potentially hazardous chemicals found in the work place. The standard also detailed protective measures necessary to avoid health and safety risks.

This standard was expanded in 1987 and now applies to non-manufacturers as well. Non-manufacturing employees are included because they are also exposed to a wide variety of potentially dangerous chemicals.

The standard now requires that all chemicals used in the work place be evaluated for possible health and safety risks. Any potential hazard associated with a chemical must be communicated to employees through container labeling, Material Data Safety Sheets (MSDS's) and employee training.

Now, I want to make clear that I am not opposed to the Hazard Communication Standard. Nor, I might add, are the businesses, trade representatives and labor organizations that testified before my Subcommittee. Everyone, and I must emphasize this, everyone agrees that informing employees of potential work place hazards is a matter of paramount importance.

However, I don't see how this Standard efficiently and effectively achieves this goal.

In fact, it seems looks to me as if the regulators created a complex, expensive and unruly system wherein worker education is not as important as the paperwork requirement.

According to the Office of Management and Budget, the Hazardous Communication Standard ranks as the 6th greatest paperwork intensive requirement ever developed. More importantly, the Material Safety Data Sheets -- the MSDS's-- that make up the bulk of the paperwork burden do not accomplish what they are intended to do.

Some of the complaints voiced before my Subcommittee by both business and labor organizations about the Material Data Safety Sheets are:

- the data sheets are highly technical;
- they are difficult for the average person to understand;
- the data sheets are costly to distribute; and,
- they are unclear, poorly written and provide inadequate or incomplete information.

Further, many employers are concerned that the data sheets they are using may not be current or accurate. They are also frustrated by the elaborate and expensive record keeping systems that they must develop. Let me add, as an aside, OSHA did not fully consider the cost of the paperwork burden to thousands of small businesses when it promulgated this standard. And, although OSHA has made little effort to educate businesses about what the government expects from them, a $10,000 fine can be levied for failure to abide by the standard.

In the real world, businesses attempting to comply with the standard face staggering problems. For example, my Subcommittee heard from a pharmaceutical distributor who complained that his business must maintain 1,500 to 2,000 MSDS's on file to meet the requirements of the standard. They further testified that to comply they will have to spend some $16 million dollars to send out 10 million MSDS's to their 1,000 customers.

We also heard from a flower grower who had to hire an additional full time employee just to keep track of the paper work caused by the standard.

Mr. Chairman, these are just two examples. However, when you multiply these incidents through the business community, you can begin to understand how truly monumental the problem is.

While listening to the testimony before my Subcommittee, I was struck by the inevitable practical problems associated with complying with the standard.

For instance, must every truck driver keep MSDS's on board the truck for every possible delivery? No individual or agency testifying before my Subcommittee answered that question to my satisfaction.

If so, I'll tell you what will happen -- the MSDS's will end up stuffed behind the driver seat or under it. They will have coffee and soda spilled on them. They will be stamped with muddy foot-prints. They will be torn and ragged and pages will be missing -- all through no fault of either the employer or employee.

In short, Mr. Chairman, for all it will cost small businesses to produce, copy and distribute these data sheets, what will we have? We will have crumpled up pieces of paper and the driver probably won't even know what piece of paper goes with which product. This is not the way to protect American workers.

I must also admit that I was shocked to hear the AFL-CIO criticize OSHA before my Subcommittee. The AFL-CIO is rightly concerned about a standard this far reaching which relies on the private sector to develop and implement the required user outreach and employee education program.

I was pleased to learn after my hearing that OSHA has finally taken some steps to help businesses implement the standard. OSHA recently completed an information booklet that explains the standard and its requirements.

As a result of my hearing, I am convinced that MSDS's are not the most efficient method of informing workers about possible work place hazards. The current MSDS system imposed by OSHA is unwieldy at best. OSHA does not control MSDS content or distribution -- the individual chemical manufacturers produce and distribute the data sheets. This is a serious problem, especially because OSHA has the right and the authority to fine businesses for non-compliance.

I have tried to get the General Accounting Office (GAO), the National Institute of Occupational Safety and Health (NIOSH) and the Office of Technology Assessment (OTA) to study alternatives to this system. However, GAO indicated it would be two years before it could start a study due to their system overload. OTA said they did not have a mandate to do this type of study, and NIOSH determined they were too close to OSHA and could be biased.

One study I have asked for is a complete examination of possible alternatives to MSDS's. One group testifying before my Subcommittee suggested that OSHA establish a central "hot line". Another suggested that placing all of the information on microfiche might reduce some of the inevitable filing and storage problems.

Some have asked for better defined and more legible product labeling rather than relying on MSDS's. Clear labels on all products are a more immediate source of hazard information and require significantly less paper work. Additionally, the federal government already regulates labeling content -- something it does not do for MSDS's!

I am continuing my efforts to have this problem studied in detail. The GAO recently indicated it will reconsider the two year timetable and I will soon meet with them to discuss the possibility of conducting this study. I invite you and members of your Committee to join me when I meet with representatives of the GAO.

In closing, I commend you Mr. Chairman for conducting this hearing and for looking into this problem. Few federal regulations have caused as much concern or consternation to the business community as the Hazard Communication Standard. I am confident that we in Congress can find a better way. I know we can offer employees the best possible protection from potential work place hazards while at the same time finding rules that employers can both live with and effectively implement.

Thank you for asking me to be here today.

The CHAIRMAN. I want to again thank you very much for coming over.

Let me ask this question. I understand you were in the bottling business.

Mr. SISISKY. I was in the bottling business. Fortunately, I sold out in 1986, and that is when I made it big-time.

The CHAIRMAN. I ran against one Rockefeller for Governor. I had to sell my cattle to run, and he did not.

Mr. SISISKY. Well, I did not sell my bottles to run. Fortunately, I had enough money in the bank.

The CHAIRMAN. Do you still own the bottling business?

Mr. SISISKY. No, I have completely sold out.

The CHAIRMAN. What is the impact of this on the bottling industry, for example?

Mr. SISISKY. I do not know. The strange phenomena, Mr. Chairman, is that I called up the bottling trade association and I asked, "what do you know about the Hazard Communication Standard?" They replied that they did not know anything about it.

Since that hearing in September I have asked just about every businessperson that I come in contact with to tell me what they know about the Hazard Communications Standard. None of them know anything about it.

This is a strange phenomena because they are subject to a $10,000 fine.

I have tried—and you will see in my testimony—I have tried to get the GAO, NIOSH, and OTA to do a study on this to see what we, as Members of the Congress, or even the Administration can do to correct this injustice. GAO tells me that it will take two years before they can even begin a study on this issue. That is why I am glad you are holding this hearing today. I need some power to get somebody to do something about this. It is becoming ridiculous.

You are going to find in the testimony today what I found as I reviewed our testimony last night before I came here. Somebody made the statement—I think he is going to testify today—that they have to train their employees not to eat wallpaper because it could cause constipation or not to drink fluid because it may be unhealthy to them. My point is that this is what you have to train the employees to be conscious of.

I think you will be very interested in what you will hear today and I look forward to working with you on this issue in any way possible.

The CHAIRMAN. I am very pleased with your abiding interest in this very complex problem. I favor the goals of the regulation, too, but I am absolutely convinced it is unworkable in its present form.

Senator Burns, did you have an opening statement you wanted to put in the record?

STATEMENT OF HON. CONRAD BURNS, A U.S. SENATOR FROM THE STATE OF MONTANA

Senator BURNS. No, because I got here on time.

The CHAIRMAN. You had already delivered it before I got here.

Senator BURNS. Yes. [Laughter.]

The CHAIRMAN. Do you have any questions?

Senator BURNS. I can understand what he is going through as a small businessman, and I never handled any hazardous stuff that I know of yet.

Mr. SISISKY. Have you ever had Pepto Bismol? It is a hazardous material. They have to file the MSDS's on Pepto Bismol.

The CHAIRMAN. Senator Kasten.

STATEMENT OF HON. ROBERT W. KASTEN, JR., A U.S. SENATOR FROM THE STATE OF WISCONSIN

Senator KASTEN. Thank you. I have a brief statement. I thank and congratulate the gentleman from Virginia for bringing this issue to us, and I hope that we can work with you to change this.

This is exactly the kind of thing that too often is hampering the formation and success of small business. Frankly, I think it is the reason that we have this Committee. This is the place that hopefully we can make a difference.

I thank and congratulate you for your work.

The CHAIRMAN. I have to confess that I was relatively ignorant of this whole thing until one of my constituents who works for a small wholesale plumbing concern in Fort Smith, AR, called me and described the situation. I have to say, we hear so many war stories, I thought this cannot possibly be true. So, I asked him to send me some documentation on what he was talking about.

I could not believe what they were being asked to do. Everything he told me was absolutely correct. And that is the genesis of today's hearing.

Again, I thank you for being here today, and I thank you for your interest in this subject. We will be back in touch with you.

Mr. SISISKY. I look forward to working with you.

The CHAIRMAN. Our next witness this morning is Mr. Frank Swain, Chief Counsel for Advocacy, Small Business Administration.

Mr. Swain, welcome to the Committee. If you can summarize your statement, we will appreciate it. If you cannot, we will understand.

STATEMENT OF FRANK S. SWAIN, CHIEF COUNSEL FOR ADVOCACY, U.S. SMALL BUSINESS ADMINISTRATION, WASHINGTON, DC

Mr. SWAIN. I prefer to summarize, because I might run out of breath before I read all 25 pages of it. Thank you, Mr. Chairman, and I would request that the statement be received in the record, and I will try to summarize the key points.

If I could pick up where Mr. Sisisky left off, the Office of Advocacy has been interested in this rule for several years simply because it is so comprehensive and such an incredible burden on businesses that have been largely unregulated in this particular way up until this point.

We are not interested in this rule because we are against safe workplaces or we are against the right of workers to know what they are working with and how to deal with those products in a safe way. I think we can all stipulate that everybody is in favor of that policy goal.

The question that this Committee is examining this morning is how successful has OSHA been in reaching that goal, and are there

other ways that are equally if not more effective in reaching that goal and at the same time pose a lesser burden to the small business community, and that is what our statement does. We suggest two or three—actually four areas in which we think further activity by OSHA will make the Hazard Communication Program more effective for the workers of our Nation and less burdensome for small employers.

First of all, it is important to note that there has been a Hazard Communication Standard for several years in the manufacturing sector of industry. And really we began to run into troubles and questions from the small business community in particular when OSHA extended, proposed extending the hazard communication rule from the manufacturing sector to all nonmanufacturers that use hazardous products.

And the list of potentially hazardous products is tremendously comprehensive. There are very few businesses out in this society, in this economy, that would not claim to have some hazardous chemical, hazardous product on their premises at some point.

So, the number of businesses that do have to comply with this rule—I should start back and say that of course, as my colleague from OSHA will say in a minute, it is a rule. It is on the books, it is in effect, OSHA is now citing and fining employers for failure to carry out the dictates of the rule. And we think that the rule applies to 3½ to 4½ million employers that were previously unregulated.

What the rule basically requires employers to do is to keep very specific pieces of information onsite as to what the chemicals are and what the toxics are, and how one safely handles them in a spill, and so on, and so forth. And those very specific pieces of information are called, as Congressman Sisisky said, Material Safety Data Sheets.

We are not talking about a warning label. We are not talking even about a longer label that you might get on an over-the-counter pharmaceutical. We are talking about something that could be anywhere from 2 or 3 pages to, in some cases, 40 or 50 pages long Material Safety Data Sheets.

Second, we are talking about OSHA requiring all employers to not only keep those Material Safety Data Sheets on hand, but requiring employers to train their workers as to how to work with the substances and how to handle the potential safety problems.

Our concern this morning is really with the concept of the Material Safety Data Sheet and the ways in which that has to be used. And I think one general theme of our comments from day 1 has been that Material Safety Data Sheets, which were basically the vehicle used in writing the rule for the manufacturers, make a great deal of sense on the factory floor where products come in, raw materials come in one side of the factory, are processed, are machined or whatever in some way, and go out the other end.

They do not make a great deal of sense in the line of distribution through wholesalers and retailers and consumers, nor do they make a great deal of sense to a broad service sector, whether it is contractors or whether it is other types of service people that use these products on some occasion. And so, basically, the total reliance on the Material Safety Data Sheets as well as the system re-

quiring the sheets to be on hand, or all sorts of heavy penalties ensue, I think is one principal problem.

I think that the first area that we can isolate where this is particularly inapt is the definition of consumer products. There are a lot of consumer products that are very hazardous. The common example is drain cleaner. Everybody knows that that is very hazardous. Most of the drain cleaners already on the market have quite an extensive warning label. But, for purposes of OSHA, that is inadequate.

Now, the Congress has recognized in both OSHA laws and environmental laws that certain consumer products can be hazardous to people and can be hazardous to the environment, and I think the most interesting point is that the EPA and OSHA have taken very different approaches to defining when the employer has certain obligations vis-a-vis his consumer products.

Basically we think that EPA under the Superfund rules has taken really a preferable approach. EPA suggests that basically when a product is used by a business in the same form or the same concentration as that in which it is commonly sold in the consumer market, then the business can simply rely on the labeling on the can and need not take any extra steps to come into compliance with the Superfund rules.

OSHA, on the other hand, has proposed a much more subjective definition which I think is not only unnecessary because there is no evidence that industry use of consumer products causes a lot of injury, but also the approach itself is vague and I think poorly defined.

So, our first principal suggestion is that in order to get rid of the current situation in which OSHA has basically said that Material Safety Data Sheets will have to flow through the entire stream of commerce from manufacturer to wholesaler to transporter to retailer for virtually every consumer product, even though downstream employers' use may not warrant use of the Material Safety Data Sheet, that OSHA adopt something like the EPA-type system in which a definition of consumer products is focused on form and concentration, rather than on an expectation by the person that is selling the product or an uncertain end use.

Second, we particularly recommend that the Committee look at, and I am sure witnesses later on this morning will address this issue in detail, the issue of use of Material Safety Data Sheets at multiemployer worksites, at construction sites.

The use of MSDSs at construction sites is troublesome. Right now if there was a building being built across the street, literally every contractor would have to show up with a pickup truck full of Material Safety Data Sheets because the mortar mix is hazardous, plumber solvent is hazardous, copper pipe solvent is hazardous, paints are hazardous. Every subcontractor has certain hazardous substances that they work with. That goes without saying in the construction industry.

And the way that OSHA has written the rule now, it seems that every single contractor will have to show up and have on site Material Safety Data Sheets for every chemical that that contractor is using that might be hazardous on that jobsite.

I think that there are better ways of going about——

The CHAIRMAN. I am reluctant to interrupt you at that point, but you are getting down to the meat of the coconut. I want to be sure I understand that.

Let us say that whenever a subcontractor shows up at the construction site he is going to have to bring along a truckload of MSDSs. What does he do with them?

Mr. SWAIN. My understanding, and I would be prepared to be corrected or have my remarks more sharpened by the gentleman from OSHA in a minute, my understanding is that his initial obligation is to bring an MSDS along for every hazardous product, and if somebody misuses the product, then there is supposed to be knowledge that that MSDS is sitting in the truck or in a jobsite office somewhere so that presumably somebody can run to the file drawer, pull it open, pull out the MSDS and find out what needs to be done if there is a situation involving personal injury with that particular product.

Senator KASTEN. Excuse me. You are saying that every subcontractor in theory has to have a file drawer of his or her own so that his or her employee can run to the file drawer, is that right?

Mr. SWAIN. That is right.

Senator KASTEN. So, if we have a project similar to the ones we have going on on Pennsylvania Avenue right now, there probably are dozens of subcontractors, which means that we would have 20 or 30 trucks and/or file cabinets. Somehow the file cabinets would have to be there for the Jones Company, the Smith Company, the Bumpers Company, and the Kasten Company.

Mr. SWAIN. That is my understanding of the way the rule works now, Senator, yes.

Senator KASTEN. So, we would have duplicate files. If every one of the contractors used a certain kind of a hazardous material, a file drawer of that same form would be in all of our files.

Mr. SWAIN. I am not sure that OSHA would prohibit the Kasten Company and the Bumpers Company from agreeing that five of your chemicals are the same, so——

Senator KASTEN. I agree to have the Bumpers Company provide that document.

Mr. SWAIN. OSHA I do not think would prohibit that, but if you reach an agreement with the Bumpers Company and the Bumpers Company did not have an MSDS on one of the substances that you are working with, I am sure that OSHA would say that you are liable under the regulation.

The Chairman. Subcontractors would be using different materials, and they might be using the same materials, but there would be some that both of them were not using. Would each be liable to make sure that he covered those materials that the other one did not have?

Mr. SWAIN. That is right. And I really think this is the nub of the issue, Senator.

If there is an injury on the worksite is it the most efficient way of making sure, assuming accidents do happen, is it the most efficient way of minimizing the injury to the worker to immediately run and look through these papers and try to find the right one, or is it to look at what is hopefully an informative label on the substance being used by a foreman who has worked with these sub-

stances and who is experienced and has trained workers on how to work with the substances and get some immediate information, or is it more appropriate to rely on basically a paper trail of MSDSs, some of which can be very, very lengthy.

If I could put in a parenthetical for a minute, suppose I am the manufacturer of a product and I sell it to your plumbing company. You can be sure that in an effort to avoid any liability action that you may ever take against me, I am going to try to put in the most detailed description of every conceivable misuse of that substance in the MSDS, which is why the MSDS's are extraordinarily informative to a chemical engineer, but probably in too many cases simply inappropriate for the normal person on a jobsite.

We have some statements, some information in our statement, about the whole issue of literacy level on the jobsite. We want to inform workers of what is going on, but MSDSs do not seem to be the most appropriate way of doing it. And really, that is the nub of the issue, whether we are talking about MSDSs on construction worksites, whether we are talking about the requirement that MSDS's be passed on down through the distribution chain for Draino to use a typical example from the manufacturer to the wholesaler to the retailer to the plumber.

Suppose the retailer sells to the plumber. Does the retailer have to guess that the plumber is going to use it for an industrial purpose and therefore give that plumber an MSDS as opposed to take it home and use it on his own drain at home? There are different ways of solving these problems, several of which we lay out in our statement.

Our third principal point is notwithstanding the way the rule is written now and the way the rule is enforced now, OSHA has made some attempts to get in touch with the small business community, and those attempts are beneficial. But they need to do a lot more.

And simply by comparison, again, with the Environmental Protection Agency, which has been intensely regulating several aspects of small business, gasoline stations, small quantity generators, EPA has done brochures, they have done videotapes, they have a small business ombudsman with an 800 number.

They have really realized that in order to have an effective regulation, you cannot simply write it and put it on the books and start going out and fining people because they are not in compliance, but you have to work with the regulated community. You have to work aggressively with the regulated community in order to get them to understand the rule because if they do not understand the rule, they will not comply with it, and if they do not comply with it, what net increase in worker health has there been in the system? Very little, I would posit.

So, therefore, our recommendations are basically that OSHA reexanime the consumer products exemption and adopt a meaningful exemption, that they choose some more effective and less burdensome alternatives for the multiemployer worksite, basically the construction worksite.

Another issue mentioned in our statement involves articles, which is a bit technical. It is an outstanding issue in rulemaking. And finally they must continue to improve and get much more aggressive in their outreach to small business.

We are not arguing that there should not be rules. We are not arguing that workers should not be trained and have this information accessible to them. We are simply suggesting that there are more effective ways to do so than have been adopted so far. Thank you, Mr. Chairman.

[The prepared statement of Mr. Swain follows:]

U.S. SMALL BUSINESS ADMINISTRATION
WASHINGTON, D.C. 20416

OFFICE OF CHIEF COUNSEL FOR ADVOCACY

TESTIMONY OF

FRANK S. SWAIN

CHIEF COUNSEL FOR ADVOCACY

U.S. SMALL BUSINESS ADMINISTRATION

BEFORE THE

SENATE COMMITTEE ON SMALL BUSINESS

ON THE

HAZARD COMMUNICATION STANDARD

JUNE 22, 1989

Good morning, Mr. Chairman. Thank you for inviting me to speak before you on an issue that is of great concern to the small business community: the Hazard Communication Standard promulgated by the Occupational Safety and Health Administration. I am here today in my capacity as the advocate for small business. My testimony does not necessarily reflect the views of the Administration.

This rule is the largest comprehensive regulatory scheme attempted by the Department of Labor. The rule could affect more than 4.5 million employers, up to 70 million workers, and it has been estimated to impose upon non-manufacturing businesses between $687 million, according to OSHA and nearly $2 billion according to SBA in compliance costs in the first year. These burdens will fall disproportionately on the smallest employers.

The success of this initiative depends on OSHA's ability to provide a workable rule and appropriate guidance to employers. Regrettably, we believe that the rule is poorly designed for the nonmanufacturing workplace and that flaws in the rule will limit its effectiveness, unless a number of important changes are made. While OSHA has been more aware of small business concerns than ever before in its prior rulemakings, increased responsiveness to the needs of the small business community must be made a priority for OSHA, since its regulations, particularly HCS, have significant implications for the millions of small entities

comprising the regulated community. To date, OSHA's efforts in this regard have been inadequate.

The Rulemaking History

Let me briefly describe the rulemaking history that has given rise to the need for us all to be here today. It is important to note that neither the emphasis of OSHA's revised final rule, nor the regulated community intended to be covered by it, is the same as was originally intended. The Occupational Safety and Health Act, 29 U.S.C. 655(b)(7), directs the Secretary of Labor to prescribe the use of labels or other appropriate forms of warnings in any standard that is promulgated. It is under this authority that a specially-formed group -- the Standards Advisory Committee on Hazardous Materials Labeling -- recommended the development of a generic hazard identification and communication standard in 1975. Following the publication of an advance notice of proposed rulemaking in 1977, OSHA published a proposal in 1981 that would have required chemical manufacturers to place detailed chemical identity and warning labels on all containers in their workplaces. The preamble stated that "[t]he proposed standard is designed primarily to provide hazards-related information to employees of employers engaged in manufacturing."

OSHA's original proposal focused on hazard warning labels for worker protection. It would have required all hazardous chemicals to be labeled in great detail. Furthermore, this rule was only to be applicable to manufacturers, who objected most strenuously to having to include all of this information about chemical characteristics on labels -- particularly in chemical plants where the contents of piping and vessels are constantly changing.

This proposal was withdrawn in early 1981; a new notice of proposed rulemaking was issued in 1982; and subsequently a final rule applicable to manufacturers (Standard Industrial Classifications (SIC) Codes 20-39) was issued in 1983. This second rulemaking favored reliance on Material Safety Data Sheets (MSD Sheets or MSDSs), which contain detailed information about chemicals and hazards. The chemical manufacturers embraced the concept of MSD Sheets because it was a better alternative for them than having to post the detailed label information throughout their plants.

OSHA did not include within the rule's coverage non-manufacturers because it was recognized that the most significant hazards were in manufacturing workplaces. However, OSHA's decision not to immediately regulate these non-manufacturer employers was challenged, and the U.S. Court of Appeals for the Third Circuit held that OSHA must promulgate a standard covering

all employers in the non-manufacturing sector. Pursuant to the court order, OSHA published on August 24, 1987 a slightly revised version of the 1983 final rule, extending coverage to non-manufacturers. As a result, as many as 4.5 million businesses will be subject to the regulatory scheme.

When presented with this revised final rule for clearance under the Paperwork Reduction Act (PRA), the Office of Management and Budget (OMB) approved most of the standard, but found that certain provisions of the rule were unnecessarily burdensome and lacking in practical utility. It was OMB's oversight of the PRA that focused attention on certain burdens associated with this rule, and until that time there had been no opportunity for public comment. OMB issued disapprovals of three provisions -- those relating to consumer products, multi-employer worksites, and FDA-regulated drug products; clarified its understanding of the definition of the term "article"; and directed OSHA to engage in further rulemaking on these issues. However, OSHA's notices of proposed rulemaking did not propose changes in the areas of consumer products and multi-employer worksites, and proposed language concerning articles that was inconsistent with the agency's previously articulated position.

The 1983 final rule for manufacturing employers emphasized reliance on the Material Safety Data Sheets because of the nature

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of the manufacturing sector. However, when OSHA proposed to include non-manufacturers, MSDS reliance remained and no analysis was performed to determine if the manufacturer rule was the appropriate model for non-manufacturers, and whether it was the most effective way to protect non-manufacturer employees. OSHA has made no determination on the record that addresses the appropriateness of MSDSs as compared to labels or other notification schemes for non-manufacturers. For example, most non-manufacturers do not have process piping and reactor vessels where MSDSs are useful and detailed labeling may be inappropriate. Rather, the painter uses cans of paint and turpentine and the restaurateur uses bottles of detergent and pressurized kegs of soda pop which are already labeled. Labels can be improved by the manufacturers if necessary.

Regulatory Flexibility Analysis

OSHA has not yet fulfilled its obligation to bring itself into compliance with the Regulatory Flexibility Act. The Act requires federal agencies to assess the impact of their proposed rules on small businesses and to consider alternative ways to regulate without significantly impairing the effectiveness of the rule. If there is no significant impact on a substantial number of small businesses, then the head of the agency may so certify. In effect, OSHA did neither. The initial revised final rule was not certified: nor was it adequately

analyzed. The certification that was eventually issued by OSHA pertained to simple clarifications made to the rule and did not pertain to the underlying rule. This rule would be greatly improved if OSHA performed a complete Regulatory Flexibility Analysis to analyze the actual impact of the rule with an eye toward finding ways to reduce the burdens and increase compliance.

The present regulatory scheme which relies so heavily on MSDSs may not be the one that will create the safest and healthiest workplaces because employees may be the victims of "information overload." According to the Business Council for Effective Literacy, there are about 14 million workers who read at a fourth-grade level, and 23 million who read at no better than an eighth-grade level. But studies show that 70 percent of the reading material in a cross-section of jobs nationally is written for a comprehension level of at least ninth grade. Material safety data sheets are probably written at an even higher level, calling into question their usefulness in providing comprehensible information to millions of workers. Research also shows the danger of information overload in programs intending to inform individuals. In one study, researchers concluded that increases in information load cause individuals to pay less

attention to relevant information.[1] When analyzing earlier findings on information load, the researchers stated:

> Based upon considerable evidence, this position maintains that there are finite limits to the ability of human beings to assimilate and process information during any given unit of time and that once these limits are surpassed, behavior tends to be confused and dysfunctional."

In a report issued by the Treasury and Health and Human Service Departments, communications experts noted that the public is generally feeling "over warned," and that growing segments of the population "ignore more and more of such [government] warnings because they feel they cannot heed the recent avalanche of warnings."[2]

OSHA has regrettably focused on an extensive information provision, and has lost sight of the impact of information on workers. OSHA should instead focus on the provision of information that will be the most useful to employees, that which they need to know to protect themselves and others from workplace hazards. The information contained in most MSDSs contains lengthy and confusing details and terminology unrelated to a worker's use of a product or his safety. MSDSs are designed for

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[1]J. Jacoby, D. Speller, C. Berning, "Brand Choice Behavior as a Function of Information Load: Replication and Extension," Journal of Consumer Research, Vol. 1 (June 1974).

[2]U.S. Department of the Treasury and U.S. Department of Health and Human Services, "Health Hazards Associated with Alcohol and Methods to Inform the General Public of These Hazards," (1980). See also, N. Malhotrn, "Information Load and Consumer Decisionmaking," Journal of Consumer Research, Vol. 8 (March 1982).

purposes other than worker protection and, hence, will not necessarily further that goal. By failing to do a proper regulatory analysis, OSHA has yet to explore alternatives and may have missed out on the opportunity to devise the best regulatory scheme for businesses and workers.

Consumer Products

One of the fundamental questions in approaching hazard communication in the non-manufacturing sector is whether it would be more effective in practice to rely on employee training and label information for common consumer products -- and require MSD sheets only for hazardous chemicals not normally available to consumers -- or to require vast numbers of MSDSs to accompany each and every one of the more than half million hazardous chemical products -- ranging from household bleach to "White Out" -- which are used in shops, offices and bakeries. We submit that the former is the appropriate emphasis for the non-manufacturing sector: an emphasis on employee education and training, labels, and the judicious use of MSDSs.

The rule includes an exemption for consumer products which applies in circumstances "where the employer can demonstrate" that the chemical is used "in the same manner as normal consumer use" and results in a "duration and frequency of exposure which is not greater than exposures experienced by consumers."

(Emphasis added). This formulation is no exemption at all since it will be difficult, if not impossible, for an employer to know in advance whether he or she can demonstrate for an OSHA inspector that the use of certain products is in the identical manner, duration and frequency as that of the prototypical consumer. As a practical matter, employers may therefore be forced to procure and maintain MSD sheets for all common household products used in the workplace, which underscores the problem of too great an emphasis on MSD sheets.

OSHA indicated that the use for which a product is intended is irrelevant; the risk to be addressed is actual exposure to a chemical without knowing attendant hazards and appropriate protective measures. We disagree. The type of use for which a product is intended should be a critical element in a scheme to regulate risks associated with exposure. The agency's statement suggests that the HCS should apply without regard to the actual risk imposed by the level of exposure, a position that is not adopted elsewhere in the HCS.

OSHA is unable to quantify the incidence of injuries or illnesses caused by consumer product use in the workplace. As the basis for its conclusion that consumer products can be hazardous if used incorrectly. OSHA submits that data from the Consumer Product Safety Commission showing that approximately 20,000 emergency room treatments have occurred (over an

unspecified period of time) nationally from injuries related to consumer products that may be used in the workplace. However, these data do not allow workplace injuries to be distinguished, and the data may be misleading because of the inclusion of incidents in the home involving young children, which would render any workplace conclusions meaningless.

OSHA has not properly analyzed the effectiveness or impact of the requirement for MSDSs to accompany consumer products. First, OSHA has not provided sufficient evidence that MSDSs would have practical utility beyond the information already included on the consumer product label.[3] Second, OSHA's proposed language still provides no objective criteria to enable upstream suppliers and manufacturers to determine which products are exempted. Therefore, this means that MSDSs will have to flow through the entire stream of commerce (including every manufacturer, wholesaler, transporter and retailer) for virtually every consumer product, even though a downstream employer's use may not warrant their receipt.

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[3]In this regard, for example, the Consumer Product Safety Commission has developed clear, succinct signal words such as "DANGER," "WARNING," "CAUTION," to be accompanied by a statement of the principle hazard, such as "HARMFUL OR FATAL IF SWALLOWED" or "FLAMMABLE." The Commission also requires that these the warnings be prominently placed on product labels in typeface and color which contrast with packaging to effectively capture the user's attention.

Third, the system proposed by OSHA would require extensive recordkeeping. To comply, each wholesaler would appear to have to keep lists of the specific items offered by each retailer on commercial account, and would have to ensure that initial and updated MSDSs for those specific items were included with the shipment. As the items purchased on commercial account changed, retailers would be required to notify their wholesalers and wholesalers would revise their lists. An undesirable alternative more likely to be used would be for the wholesaler to ship all MSDSs to any retailer offering any commercial account and depend on the retailer to sort them out. This huge amount of paperwork is totally independent of any employees actually receiving any information at all about potential hazards in the workplace.

To improve the rule and its effectiveness, OSHA needs to consider alternatives. One may be for the employer to request an MSDS directly from the manufacturer upon determining that a consumer product was being used in a manner warranting the additional hazard information. This option may impose affirmative requirements for employers who use consumer products in such a manner, but would eliminate a great deal of paperwork for the distribution sector.[4] A second alternative would be to designate for coverage specific products for which OSHA has

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[4] Because OSHA did inadequate analysis, it is unclear whether the burden of requesting a few MSDSs would be more or less than the burden of dealing with voluminous, unnecessary MSDSs.

evidence as being particularly hazardous, and exempting all other consumer products. A third and most likely the best alternative would be to adopt the SARA[5] definition of consumer products. The SARA definition focuses on the "form and concentration" of products packaged for use by the general public. Products would be labeled in accordance with relevant safety statutes and regulations. MSD Sheets will always be available on request from the manufacturers should additional information on a particular product be desired.

In sum, the failure to adopt a meaningful consumer products exemption makes the rule impractical. OSHA cannot rationally expect extensive non-manufacturer compliance with the rule in its present form. The issue must be more carefully considered

Multi-Employer Worksites

Another provision which will be difficult to implement concerns multi-employer workplaces.[6] The rule requires each

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[5]The Superfund Amendments and Reauthorization Act of 1986 contains in Section 311(e)(3) a definition which focuses on the "form and concentration" of products packaged for use by the general public. Congress recognized that familiarity with common consumer products, their hazards, and their usual uses, made unnecessary the provision of detailed MSDS information for all such products for right-to-know purposes.

[6]A common example of a multiple employer worksite is a construction site, where any number of different employers are present with changing workforces for overlapping periods of time. Many chemicals may be present in small quantities and the locations and kinds of chemicals change rapidly as projects

employer at a common site to exchange and maintain MSD sheets at that site for immediate access. OSHA states that the multi-employer worksite provision is critical to the proper functioning of the rule, and that MSDSs are necessary to ensure that proper information is available to both employers and employees. However, the language of the rule does not support the specific requirement of maintaining MSDSs at multi-employer worksites rather than making MSDSs available upon request.

As I stated at the outset, the MSDS system was developed for the manufacturing sector, where establishments are fixed sites with a relatively stable workforce and exposures are relatively predictable. The issue here is whether MSDSs are useful in the very different environment of a multiple employer worksite, such as a construction site, where many chemicals may be present in small quantities and the locations and kinds of chemicals change rapidly as the job progresses and employers and employees enter and leave the site.

For example, what happens when a new employer arrives at the worksite: must all work stop until MSD Sheets are exchanged? Where at a worksite are the MSD Sheets to be kept for access? And when the painter stops by the local hardware store for a can of trim paint, will the retailer be required to give employees MSD Sheets, or only offer the name and address of the

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progress and employers and employees enter and leave the site.

manufacturer? If the latter, can the painter use the paint right away, or must he delay completing the job until he writes to the manufacturer and receives an MSDS in the mail?

Again, OSHA did not engage in a complete Regulatory Flexibility Analysis affording the opportunity to consider other regulatory options -- such as a central chemical list to be kept on-site with MSD Sheets to be made available on request the next day, or a generic approach which relies primarily on comprehensive training and labeling, supplemented by industry-specific guidance on the hazards of the chemicals likely to be encountered. The agency's justification relies primarily on its belief in the generic need for MSDSs in employee training and does not address with any specificity the relative utility of having the MSDS on the multi-employer worksite as opposed to making it available upon request.

Definition of "Article"

In January, 1988, former Assistant Secretary John Pendergrass stated in a letter to OMB that "absent evidence that releases of such very small quantities could present a health hazard to employees, the article exception to the rule's requirements would apply," incorporating the common-sense notion that the level of risk posed by a release should be an explicit factor in determining the application of the HCS. OSHA

subsequently went on to propose modifications in the "articles" definition: to mean "a manufactured item, other than a fluid or particle: ... (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts, of a hazardous chemical (as determined under paragraph (d) of this section) and does not pose a physical hazard of a health risk to employees." In the preamble, OSHA discussed what it intended by the change: "The rule requires compliance with the HCS when workers are exposed to hazardous chemicals known to be released from manufactured items under normal conditions of use, but clarifies by reference to paragraph (d) that the percentage cut-offs in the current rule's mixture provisions exempt employees from the HCS where there are very small quantities of hazardous chemicals released from these items ..." (53 Fed. Reg. 29833).

This language, as explained by OSHA, seems inconsistent with Mr. Pendergrass' position. It seems to define "very small quantities" as those quantities that fall below the percentage cut-offs used for mixtures; that is, if an article releases several hazardous substances, only those that constitute less than one percent of the total release (or 0.1 percent for carcinogens) would be eligible for exemption, regardless of the hazard posed by the other chemicals. This would not take into account the level of risk or the likelihood that the exposure will injure employees in determining application of the standard, but simply focuses on the proportions of chemicals released. All

chemicals constituting more than one percent of releases would continue to be automatically covered by the HCS, regardless of the actual quantity released or the hazard posed. Thus, no article releasing any amount of a single chemical no matter how small would ever be exempt, because that chemical would always be 100 percent of the release.

A recent case in the District of Columbia Circuit demonstrates the absurd results of the present "article" formulation. In General Carbon Company v. Occupational Safety and Health Review Commission, 860 F.2d 479 (D.C. Cir. 1988), the General Carbon Company sought review of the Commission's order upholding an administrative law judge's determination it had violated the HCS by its failure to attach a warning label to containers of electrical brushes. The brushes, which are made predominantly of copper and graphite, are shipped to an auto products plant, where two employees insert the brushes into brush holders for use in electric motors. The employees are exposed to small quantities of copper and graphite dust at concentrations of only about one to five percent of the permissible exposure limits for these chemicals.

The company conceded that copper and graphite are hazardous chemicals, and that the employees are exposed to copper and graphite dust from the brushes. The company nevertheless contended that the articles exemption should apply, since

exposure levels were far below the permissible exposure limits for those substances. The court, bound to consider only whether the Secretary's interpretation of the regulatory language was reasonable, stated that "[t]he definition does not by its terms, however, require that exposure levels within a particular workplace be so high as to pose an actual danger in order for the labeling requirements to apply." The degree of risk, according to the court, was "generally irrelevant" in determining whether a duty to label exists according to the language of the standard.[7] Thus, the court had no choice but to uphold the Secretary's interpretation. However, the court made clear its disagreement with the result:

> The company's reasonableness arguments ...might more plausibly have been framed as a challenge to the validity of the underlying standards, not as a basis for contending that the standards have been misconstrued. General Carbon has foregone such a challenge, however, and we therefore have no occasion to consider the validity of the HCS.

Id. at 17. OSHA's exemption, which is not based on risk, perpetuates the absurd situation described in General Carbon. OSHA has adopted a risk-based concept for worker notification in

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[7]This case was brought under the version of the standard codified at 29 C.F.R. 1900, which was promulgated in August 1987. The third prong of the definition reads as follows: "which does not release, or otherwise result in exposure to, a hazardous chemical under normal conditions of use." The proposed amendment to the definition of an article, stated above, provides that a product releasing "minute or trace amounts" of hazardous chemicals may still qualify for the exemption. However, the court here stated that these brushes release more than a few molecules of carbon and graphite. Thus, even though the levels of exposure were permissible under OSHA guidelines, the result would have been the same.

its recent formaldehyde rule, and should also consider a risk-based approach in this context.

It may be that the problem is simply one of phraseology rather than differences of approach. For example, language that would be consistent with OSHA's earlier stated view would define "article" to read: "'Article' means a manufactured item, other than a fluid or particle: ... (iii) which under normal conditions of use does not release quantities of a hazardous chemical that pose a physical hazard or a health risk to employees."

OSHA should clarify that employers in both the manufacturing and non-manufacturing sectors will be able to exercise judgment about whether exposure from an article does or does not present a health hazard to employees. Confusion on this point may have been created by OSHA's preamble statement: "OSHA concludes that ... the definition ... and application of the exemption is an issue in the manufacturing sector where such items are produced, not in non-manufacturing. The decisions regarding the application of the rule to such items has already had to be made by the manufacturing sector .... For non-manufacturers, the difference in the definition only affects them in terms of what information they receive about the items they use in their workplaces." The implication is that manufacturers will make the determination to send the MSDS and labels downstream based on the "normal end use" of articles, and that downstream users will be

required to implement a full hazard communication program simply because they receive the MSDSs and labels, without regard to the use or exposures in their specific workplaces.

Outreach Efforts

One concern that we have, Mr. Chairman, is that small businesses across the nation are unaware of the their responsibilities under this regulatory scheme as it presently stands. While OSHA has made some progress, there is still a great deal that must be done. Even if small businesses obtain OSHA's compliance assistance materials, we are concerned that it will not provide them with sufficient guidance. OSHA should issue additional, simplified materials. Increased awareness of the rule and its requirements by the many small businesses of this country is the only way meaningful compliance will ever be achieved.

I would like to mention a few ideas that could be a tremendous value to the small business community and would most likely fit within OSHA's budget.

First, the need for outreach materials is paramount. OSHA historically has not engaged in outreach for its rules, and in this case the lack of guidance is promoting confusion in the regulated community. OSHA may be doing more than it ever has,

but it still has many avenues to follow through on. Likewise, private initiatives toward compliance cannot be used as a justification for an agency's not meeting its own responsibility. Other agencies routinely perform outreach, and a look at some agency efforts will be illustrative.

The Environmental Protection Agency (EPA) has consistently done a good job in promoting its rules among the regulated community. Prime examples of successful outreach include the Underground Storage Tank and Small Quantity Generator rules.

Much of the success of the Underground Storage Tank outreach program can be attributed to the cooperative relationship between the Office of Underground Storage Tanks and industry groups. For example, EPA provided camera ready copies of its brochures, What's in the Pipeline? and Musts for USTs, to industry groups, who printed and distributed the brochures to tank owners. These brochures were plain English versions of the proposed and final rules, directed to gasoline station and other tank owners who would not be likely to read the Federal Register.

EPA also produced two video tapes. The first tape was produced with the Fire Protection Association to teach fire officials how to check for environmental hazards during their inspections of underground storage tanks. The second tape was a cooperative effort between EPA and industry to develop a

training tape for workers who install underground tanks. The goal of this tape is to ensure proper installation procedures are followed, and thus the likelihood of environmental and health hazards are reduced.

EPA developed a similarly comprehensive outreach program for Small Quantity Generators. For example, EPA printed and distributed a handbook which explained how to complete a manifest and to help small businesses comply with the interim requirements during the rule development process. When the final rule was promulgated, EPA published Understanding the Small Quantity Generator Hazardous Waste Rules to help small businesses meet the new requirements. Approximately 650,000 copies of this brochure were distributed. Working with the Public Broadcasting Service, EPA produced a teleconference that was aired in more than 130 cities. The teleconference was later made available on video tape. EPA also participated in workshops sponsored by various groups. Finally, EPA provided grants to states to develop their own programs.

Another example of a recent EPA outreach effort has been its cooperation with the SBA's Regional Office in Region VII, where a guide was prepared for small business owners to help simplify compliance with EPA's Title III Community Right-to-Know requirements under SARA and to help small business owners understand the link between Title III and the Hazard

Communication Standard. I am pleased to say that regional OSHA officials signed on to this effort.

Another agency that engages in good public outreach -- notwithstanding its often unpopular image -- is the Internal Revenue Service. The IRS has set up toll free telephone lines to respond to taxpayer questions in several languages, and through its Problem Resolution Office, attempts to expeditiously resolve taxpayer difficulties. The IRS has also instituted a telephone service for deaf taxpayers who have access to TV/Telephone-TTY equipment and a telephone service to check the status of refunds. Information is also available in braille for the blind. Numerous publications have been developed to assist taxpayers in understanding their rights and obligations. These publications and services are available at no charge. To better educate taxpayers, the Service conducts Small Business Tax Workshops in conjunction with the SBA which concentrate on recordkeeping and tax withholding, often in conjunction with the SBA. Through its VITA program, the IRS elicits the help of volunteers in assistance and outreach. It also provides counseling for the elderly through its TCE program. Through Operation Link, the agency opens better channels of communication with private practitioners and through Student Tax Clinics makes students aware of their obligations. Additionally, the IRS has organized advisory groups to assist in understanding the problems faced by

practitioners and taxpayers and to provide fresh insight into solutions.

The one document that OSHA has developed for HCS will not be sufficient to meet the needs of the entire regulated community. These materials need to be supplemented with others addressed directly to the concerns of very small employers. According to the Small Busin Data Base maintained by the Office of Advocacy, there are 3.2 million businesses with fewer than 20 employees. These businesses do not have toxicologists and industrial hygienists on their payrolls. As non-manufacturers, they have very different concerns than do larger employers vis-a-vis HCS and deserve OSHA's attention.

Second, OSHA should evaluate the benefits to be derived from the use of generic HCS programs.[8] For example, OSHA should consider modifying and making available the existing Federal Hazard Communication Program (FHCP) developed in conjunction with the Federal Advisory Council on Occupational Safety and Health (FACOSH). Also OSHA should review for approval the generic training programs developed by trade associations and other private-sector organizations. This could greatly reduce the start-up costs and paperwork burdens on small firms.

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[8] A generic program is one developed for use by broad categories of employers.

Third, OSHA should make a dedicated effort to inform the regulated employers about this rule. This may require directly mailing to employers information about the HCS and how to comply with it. In 1987, the Immigration and Naturalization Service reached those it newly regulates in this very way. INS mailed to employers a "Handbook for Employers" with "Instructions for Completing Form I-9 (Employment Eligibility Verification Form)". This non-threatening 16-page booklet was simply written and contained a special section with questions and answers about compliance. Seven million booklets were printed and mailed. The costs? Printing costs were less than $2 million and postage costs were approximately $900,000. This is certainly an outreach option OSHA should consider for a rule as important to the health and safety of workers as is the HCS.

Finally, for this program and for the success of future rulemakings, the Department of Labor should establish a Small Business Ombudsman who can work with the regulated community to improve the quality of rulemaking and outreach efforts. EPA has done just that, and it has greatly improved in its sensitivity to small business concerns.

Conclusion

In conclusion, OSHA should properly address small business concerns over this rule. In so doing, OSHA would not only meet

its obligations under the Regulatory Flexibility Act, but also issue a better rule, thereby increasing the likelihood of meeting the goal we all share: protection of employees from workplace hazards.

OSHA must also acknowledge its responsibility to inform the regulated community of the existence of the rule and it must provide adequate, focused and comprehensible direction on compliance procedures. To achieve this goal, the guidance must be tailored specifically to small business.

The CHAIRMAN. Mr. Swain, we have become increasingly aware of hazardous chemicals in this country. The effect can be very insidious. You may not know, for example, that you have been exposed in a dangerous way for years—somewhat like the Agent Orange kind of cases.

Now, how does this regulation operate in the case where somebody suffers an exposure to a chemical on the jobsite, an employee of a subcontractor, for example. You may rush to a file drawer and find out what the antidote is and what you do in that case, and so on.

But are we not getting back to this high risk notification issue that we considered extensively in the past? A man comes down with cancer 10 years from now and he says the reason is that he was handling these materials and was never told they were hazardous or what the effect of constant exposure to them would be.

If an employer can prove, for example, in a case like that, that he had these MSDSs on file, and that this man was instructed on proper precautions, does that relieve the employer of responsibility? That is a legal question, I guess, but it seems to me that you could have a lot more of those cases than on the job injuries.

Mr. SWAIN. That is a really key question, Senator, and I will try to give you two responses, one to your legal question and one to how this issue is different than or the same as the Metzenbaum proposal.

I think that you are absolutely right that the real significance of this rule is not whether the MSDS is actually in that truck or not and probably not whether the OSHA inspector comes along and issues a fine for it being in the truck.

The real significance of this rule is 3 years down the pike when there is a problem, an accident on the worksite, and the parties end up in court somehow, and we have this Federal rule that in effect establishes a standard of care that the careful employer in order to be in compliance with OSHA regulations has to keep X, Y, and Z papers on the jobsite or else he is not in compliance with the Federal rule.

I think that, therefore, becomes a piece of evidence, and I would venture to guess a pretty persuasive piece of evidence in a subsequent civil action as to whether there should be liability flowing in one direction or the other.

I think the way the OSHA rule is written has major significance, not just on how many people might be fined this year or next year by OSHA, but to the entire field of civil liability in occupational cases.

How is this different from the debate that was held last year? Basically Senator Metzenbaum was—he would never allow me to paraphrase him, but I think the gist of his argument was that for years and years and years we have had worker exposure to things that they did not know they were exposed to, and this has had a cumulative effect, and those people need to be informed of this.

This is a forward-looking rule that workers will be informed, are informed now. We are really arguing today about the way that they are informed and the effectiveness of that.

But the point that everybody agrees on is that they will be informed now about the immediate risks of exposure to these particular types of products.

But one of the key arguments with the Metzenbaum bill was not over whether workers had a right to be informed but, as you will recall and as your hearings brought out, is what sorts of civil liability would be created against an employer who, in fact, followed the proposal and did not inform the workers and informed them just enough to create some consternation among the workers and have them run out and hire a plaintiff's lawyer and come back in court against the employer.

I think that OSHA's implementation of this rule is a good step because it does not stall from December 1988, hence forward an affirmative obligation by employers to inform their workers about when they are working with something dangerous.

Senator Metzenbaum's proposal really was looking backwards. It said when you worked with something 25 years ago what obligation does your employer have today. Slightly different issues.

Really, the same issue is how is this rule written and what impact is this going to have on some civil liability further on down the pike where the Federal Government is never a party to the action.

The CHAIRMAN. This is sort of an elementary and simple approach to it, but something to throw out. Would it be feasible for people to actually train their employees, 1, inform their employees that they are going to be handling these materials, and that these materials, A, B, C, D, and E, if misused, can have these possible consequences. You train them in the use of the material. You demonstrate the way to handle them, and make clear that if they mishandle them, there is going to be some consequences to them.

Have the employee sign the statement, "I have been instructed that I am going to be using the following materials, and I have also been instructed in the use of these materials, and I have also been instructed that if I misuse them, contrary to the instructions in my training, there are possible consequences to my health."

Why could you not just put the burden on employers to give that kind of training and that kind of notice on the front end?

Mr. SWAIN. I think that is absolutely feasible, Senator and in fact part of the rule that we are really not arguing so much about is the fact that not only must they keep these data sheets on hand, but they must go out and train workers, whether they do it through lecture, filmstrip, booklets, or whatever, they have got to do just that sort of thing that your question intimated. Really, that is the complaint that we have here this morning. Having done that, what is the most effective way of communicating with the employee what they are working with, and then to kind of continue to have heavy regulatory reliance on this set of paperwork really does not pass the cost/benefit standard.

The CHAIRMAN. Some firms, of course, will computerize all this, and they will carry the computer to the worksite. I assume they can take a PC out to the work site and maybe accomplish the same thing. A lot of small businesses do not have computers, could not afford the computers, and could not afford the people to operate them if they did have them.

Those are the people this Committee is charged with the responsibility of at least trying to protect—not protect unreasonably or unduly, but to try to make sure they are not unfairly burdened. We have 23 million workers, about 20 percent of the people in the workforce in this country, who read below the eighth grade level. I looked over some of those MSDSs last night, and I read above the eighth grade level, and I did not understand. Some of them are very complicated.

I am a former small town hardware operator, hardware owner. We probably had 10,000 items in our store. And I promise you I would be out there in the firing line with those antigovernment folks today if I still owned that business. I would be upset about this law.

I think the way EPA handles it is far better if it is something that you are going to be using in the workplace that is normally available to the consumer. I bought a chemical drain cleaner to unstop a sink.

I am telling you, by the time I got through reading the label on the thing, I was almost afraid to use it. I mean, I put a mask over my face and poured that stuff in and ran.

You pointed out a while ago that EPA says when a product is used by a manufacturer in the form available to the consuming public and the warning label is on there, then nothing more should be required.

Mr. SWAIN. That is right, Mr. Chairman.

The CHAIRMAN. I agree with you. I do not see why that would not be perfectly plausible.

Senator Burns.

Senator BURNS. I have one question. In your estimation, Mr. Swain, does the law have to be changed or was the problem the rules that were written to administer this law? I guess it is safe to say sometimes we pass legislation, and then we do not even recognize it once we see the administrative rules. And I am wondering, in that area, what your opinion is on that?

Mr. SWAIN. In this particular rulemaking, Senator Burns, OSHA made this rule on safe workplaces under a very general part of the underlying OSHA act that was passed in 1976 or 1974, and there was a very general clause about worker protection.

And in 1983, I believe, OSHA said well, in order to enforce a safe workplace, we are going to say that all manufacturers have to provide Material Safety Data Sheets.

And then what happened was, I believe it was the United Steel Workers took OSHA to court and said that it is inappropriate for you folks to just regulate manufacturers. You should be regulating everybody in business that has anything hazardous in the workplace. And that court action has gone back and forth for the last 5 to 6 years. In fact, one little bit of it is in front of the Supreme Court on the paperwork provisions.

And so, really, this is a matter where there is going to be change, it is change in the administrative regulation. Now, the OSHA people point out in their statement, and properly so, that they have a very long and lengthy rulemaking record on this.

I would suggest that some of the suggestions that we are discussing now will, I am sure, be offered in a few minutes by other busi-

ness witnesses and are perfectly capable of being adopted by OSHA right now on the basis of their record. So, it is not so much a matter of passing a new law, it is a matter of administrative discretion by the Department of Labor.

Senator BURNS. That is all I have.

The CHAIRMAN. Senator Kasten.

Senator KASTEN. Let me follow up on that.

What I want to get at is why EPA went through a similar process and ended up with a more workable kind of solution, whereas OSHA went through a process that is seemingly unworkable, and too costly.

You could argue that they put this thing together so we would knock it out. This is ridiculous. During the process between the small business community, the Small Business Administration, and other people who are representing the construction people, what is happening here? Are people walking in and saying this is going to be hard for us to do and OSHA says go to blazes? Or are people walking in and saying we do not understand or do people just pay attention and let them do it their own way? What is driving this coming from the other side and why does one Government agency seem to be so different from the other, the EPA versus OSHA?

Mr. SWAIN. That is a tough question to answer, Senator. Obviously we think EPA has a good idea, and we hope that OSHA would adopt it. They chose not to. We raised this idea with them many months ago, over 1 year ago.

Senator KASTEN. Who is "we"?

Mr. SWAIN. The Small Business Administration Office of Advocacy. I met personally in I believe it was November 1987, with then-Assistant Secretary of Labor for OSHA, John Pendergrass and raised several of these issues directly. We have a long record of comment letters to them, and we also worked with the staff. And I do not want to say the relationship has been entirely antithetical because they have made some movement in some cases where we felt that they could and in other cases they did not listen to our advice. That is the way the city works.

As to why EPA achieved a better result than OSHA, I think OSHA has a sort of philosophy always that worker protection is paramount, and that is really—you know, we have got blinders on. That is the only thing we are going to look at. And I think EPA has taken a little broader view and said environmental protection is paramount, but we cannot achieve environmental protection unless we realize the capacity of the business community to protect at the same pace and at the same standard that our theoreticians would like to see.

So, it is not so much just in this rulemaking. It is in a variety of rulemakings that I think OSHA has taken a little bit different tack than the EPA has. But as to why they have rejected this particular alternative, I could not tell you.

Senator KASTEN. On the contractor side issue, somebody has said this is crazy. Do it this way. And somebody at OSHA has said we do not understand you or we do not agree with you or we do not care about the fact that it is going to cost too much and seems complex.

I would ask the people from OSHA the same kinds of questions, but now I am trying to get it from you. I am assuming people are trying to get things accomplished.

Mr. SWAIN. The contractor issue has been the most litigated issue of this whole thing. I am one of the people in one of the parties that has been seeking a change out of OSHA, and basically your question is why did they not change.

Senator KASTEN. What I am trying to establish here is that the people at OSHA have been told often enough so that they should have at least listened and be aware that those kinds of problems existed. My question to you is did you tell them often enough or did this whole problem sort of float over here, and it was not an adversarial kind of process. It was just simply one that happened.

If it is an adversarial kind of process and we ended up with this result, then there are some people at OSHA that have not been doing an adequate job.

Mr. SWAIN. Speaking personally for our office at the Small Business Administration, we have written several comments letters to OSHA on a variety of these hazard communication issues.

As I mentioned, I personally have met with Dr. Pendergrass, who was the Assistant Secretary, on more than one occasion. Last December we testified and took questions for over 1 hour at an OSHA administrative hearing at the Department of Labor. So, now we are not floating in here on June 22 for the first time and saying oh, they have done terrible things. We are working with them on this issue. We have been working with them as opposed against them, some would think, on this issue for at least 2 to 3 years.

In fact, I signed a comment letter on it back in 1983 on the original Hazardous Communication Standard as it applied to the manufacturing industry. If you want to take it from that level, SBA's been interested in this for over 6 years.

The CHAIRMAN. Mr. Swain, let me say this is sort of like Lucy holding the ball for Charlie Brown every fall. Every time we pass a law the bureaucrats go overboard.

The classic bureaucrat's first obligation is to cover himself with paper. And then Congress gets this outpouring of opposition from its constituents and we hold hearings like this and we say this is insane. Congress is saying you have gone overboard with this thing. You have gone too far.

Now, one of the things that we do up here is to try to eliminate that constant cycle of the bureaucrats going overboard and our reining them back in. I tell my constituents I fight with the same people they do. That is the reason we passed the Regulatory Flexibility Act was to say to the agencies, use a little common sense.

Are you familiar with that act?

Mr. SWAIN. Yes.

The CHAIRMAN. Would you say it has been ignored in this case?

Mr. SWAIN. I would say it has been ineffective in this case. OSHA has done one regulatory flexibility analysis when they first proposed extending the rule for manufacturers to nonmanufacturers.

We thought that analysis was inadequate because it failed to consider a number of the issues that we felt that they should have con-

sidered and have failed to consider a number of alternative ways of going about it and doing that.

And the real problem with the Regulatory Flexibility Act, Mr. Chairman, is if an agency either chooses to ignore it or does an inadequate job, there is no enforcement mechanism.

We respond, we write them a nasty letter, we go over and we try to reason together or yell at them or whatever seems to be most appropriate at the time.

Occasionally we can get OMB to support our position, and it happened to some degree in this particular rule. OMB was most supportive of some of the issues that we raised.

But the real problem is under the Regulatory Flexibility Act, the ultimate discretion always lies with the agency issuing the rule and if they choose to do it their way, they are going to do it their way, and there is no enforcement mechanism to the extent that the Office of Advocacy cannot stop anything cold nor, can anybody really effectively use the RegFlex act in going to court and say that as a matter of administrative rulemaking, this rule is illegal because it fails to comply with the Regulatory Flexibility Act because under the Regulatory Flexibility Act there is a provision that severely limits the ability of judges in an action to review a rule, severely limits the ability of judges to look at RegFlex compliance as a factor as to whether that rule is legal or not.

The CHAIRMAN. Have you ever suggested to Congress before today that OSHA have an ombudsman for small business?

Mr. SWAIN. I believe we suggested in a hearing in front of Congressman Sisisky's Committee back in September that that happened, because our perspective on the issue is pretty much the same now as it was then.

The CHAIRMAN. Thank you, Mr. Swain.

Our next witness is Mr. Leo Carey, Director, Office of Field Programs, U.S. Department of Labor, Occupational Safety and Health Administration.

STATEMENT OF LEO CAREY, DIRECTOR, OFFICE OF FIELD PROGRAMS, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, U.S. DEPARTMENT OF LABOR, WASHINGTON, DC, ACCOMPANIED BY CHARLES ADKINS, DIRECTOR OF HEALTH STANDARDS PROGRAMS

Mr. CAREY. Thank you, Mr. Chairman and Members of the Committee for the opportunity to discuss the impact of OSHA's Hazard Communications Standard on the small business employer. I am Leo Carey, Director of OSHA's Office of Field Programs. My office coordinate's the agency's activities in its 10 regions.

With me at the table is Mr. Charles Adkins, OSHA's Director of Health Standards.

As you asked, I will try to summarize my prepared statement.

Unlike you, Mr. Chairman, and many others here this morning, I have not owned or operated a small business, but I have been employed in family-owned businesses, as have other members of my family and many folks in OSHA. I know from personal experience as well as from years at OSHA that worksite hazards pose as great

a threat to employees in small establishments as they do to workers in larger businesses.

I know, too, that in years I have spent as an OSHA compliance officer and later as an area director that the accidents that occur in small businesses are as severe as those in large establishments and that illnesses workers may incur from overexposures at small workplaces can be as damaging as those in larger businesses.

Since the Committee will undoubtedly hear personal experiences from representatives of the small business community and since no representatives of employees of that community are scheduled to appear today, I would like to relate some of my experiences.

I have investigated a small pesticide plant in Virginia where employees experience gross pesticide poisoning by the pesticide kepone because they were told to ignore warning labels by their employer and because neither they nor their physicians were aware of the symptoms of such poisoning when those symptoms first appeared.

I am familiar with the death of an employee of a small cleaning service who was overcome while strip cleaning the floor of the Federal Building in Chicago using methylene chloride without adequate training on its hazards and proper use.

I am aware of the death of a printer in Colorado who died from a chemically caused anemia after working in a small print shop which had used benzene in unlabeled containers.

I am also aware of a small company in Colorado where both the employees and the employer were unaware of the high lead content of the glass they melted and ground resulting in extremely high blood lead levels not only in the employees, but in their wives and their children as a result of lead thus being unknowingly taken home.

I believe all of these tragedies could have been prevented had a Hazard Communication Program been in place at these worksites.

I know also that the Congress declared in OSHA's enabling statute that OSHA's mission was to assure so far as possible safe and healthful working conditions for every working man and woman in the Nation. All employees are given the same rights under the OSHA act to a workplace reasonably free of hazards. All employers are given the same responsibilities, to provide such places of employment.

However, because of the concern for the feasibility of our requirements on some employers, a concern which our statute insists that we take into account, OSHA over the years has paid heed to the particular difficulties small employers may face in meeting the requirements of the OSHA act.

For example, OSHA does not require employers of 10 or fewer workers to maintain the log of injuries and illnesses that most other employers are required to keep.

OSHA does not include small businesses on its list of agency-initiated or programmed inspections in the manufacturing sector.

We also take into account the size of a business in determining whether reductions in penalties for violations of the OSHA act are warranted.

OSHA had heard some time ago and has since given careful consideration to the arguments made this morning by the Chief Counsel for Advocacy of the Small Business Administration.

Mr. Swain testified on behalf of his agency at the public hearings on the OSHA rulemaking. He argued then as now for a different Hazard Communication Standard from the one OSHA issued in August 1987, and began to enforce in August 1988.

SBA's comments are among tens of thousands of pages of public comment received from approximately 1,000 commenters representing the many diverse views of the parties concerned in this rulemaking.

It is OSHA's responsibility under the OSHA law to regulate on this issue, to determine which of the recommended approaches best meets our statutory obligations to provide safe and healthful places of employment for our workers, not just those in large businesses.

Of course, it is also our responsibility under the 1980 Regulatory Flexibility Act to consider alternative approaches for small business provided always, as the OSHA act requires, that the level of protection chosen by the agency is the most protective level feasible.

OSHA has prepared two lengthy regulatory flexibility analyses for its Hazard Communications Standard, one for the standard issued in 1983 for the manufacturing sector, the other for the expanded rule issued in August 1987. It was, in fact, concern for small businesses that in part prompted OSHA to allow 2½ year period between the initial issuance of the Hazard Communication Standard for the manufacturing sector in November 1983, and the requirement for full compliance in May 1986.

Other provisions of the standard were tailored to accommodate particular industries and the small businesses in those industries. For example, there are meaningful exemptions in the standard for certain manufactured articles, consumer product, and over-the-counter drugs.

Work operations involving the handling of chemicals in sealed containers and certain retail distributing operations are not subject to the full requirements of the standard. OSHA's regulatory flexibility analysis for the expanded rule, as Mr. Swain remarks in his testimony this morning, was not duly certified.

SBA's prepared statement declares that OSHA, "has not yet fulfilled its obligation to bring itself into compliance with the Regulatory Flexibility Act." Since OSHA takes its obligations under this act very seriously, we wish to set the record straight on this point.

The omission of a duly certified analysis was due to severe constraints under which OSHA was operating to meet a court deadline for its expanded rule. The Regulatory Flexibility Act requires that an analysis of the impact of a proposed rule be submitted along with the proposal. The court ordered us not to issue a formal proposal for an expanded standard, but instead to proceed directly with a final rule thereby eliminating the vehicle for submission of a proposed regulatory flexibility analysis. Notwithstanding this, OSHA went beyond what it had to do legally by preparing an analysis and summarizing it in the final rule.

Furthermore, the issuance of adherence to the Regulatory Flexibility Act was raised in proceedings challenging the expanded

standard before the Third Circuit Court of Appeals. At that time SBA testified that the issue was sufficiently raised to preclude intervention by SBA in the process, although SBA clearly had such authority.

The Third Circuit Court subsequently upheld the OSHA standard in every respect and declared that it had met all legal requirements. The Supreme Court has decided not to review the Third Circuit's decision on this issue. OSHA believes, therefore, that it has more than met its obligations under the Regulatory Flexibility Act.

As stated in my prepared remarks, OSHA did believe that more time should be allowed for public comment. The agency took action simultaneously with the issuance of the final rule to see that that occurred.

When we talk a little bit about the specifics of the act, I cannot overemphasize to the Committee that OSHA's Hazard Communications Standard is a training standard based on the premise that workers have a need and a right to know the identities and hazards of the chemicals they work with as well as the associated protective measures.

The required information is to be communicated to workers in three ways: Through labels on containers, through more detailed information bulletins called material safety data sheets, and finally through training, the most important aspect of the standard.

An employer's plan for implementing provisions of the rule constitutes the facility's Hazard Communication Program. In outlining the history of OSHA's rulemaking, SBA's testimony this morning describes OSHA's January 1981 proposal and subsequent March 1982 proposal on which the present standard is based. Omitted from SBA's account is the essential difference between the two approaches.

The January 1981 proposal was a labeling proposal, similar to the one suggested here this morning. With that is all the information overload on the label that such a system would entail.

Our March 1982 proposal was a Hazard Communication proposal with emphasis on training, on the requirement that employers train workers in the hazards of the substances they work with and how best to protect themselves from potentially harmful exposures.

The labels are to be simple warnings with a brief summary of the contents and the hazards plus an identification of the chemical product so that any more detailed Material Safety Data Sheet could be accessed if needed. The MSDSs are to be used in developing the required training session for workers and to be available if requested by workers or their representatives who might need the level of detail found in these sheets for medical or other purposes. And most importantly, the required training sessions are intended to instruct workers on how to protect themselves in the workplace and how to avail themselves of available additional information if needed.

It is not necessary nor intended that employees be trained on all the information required on an MSDS. Still, OSHA does recognize the burden that these provisions place on employers. OSHA does not believe, however, that the burden is as great as some have maintained. The agency's belief is supported by substantial evidence presented in the massive public record gathered on this issue

as well as our own and the States' field experience in enforcing this standard.

To date, both the construction industry and the nonmanufacturing industry sectors have accomplished a rate of compliance with this standard well over 50 percent.

For example, in the printing industry our in-compliance rate as a result of our field inspections is 56 percent.

In the construction industry, the construction industry's rate of compliance with this standard as a result of our field investigations is 67 percent.

In the wholesale distribution of drugs, the in-compliance rate for that industry as a result of our field inspections is 60 percent.

In the hardware stores the percentage of in-compliance is 67 percent.

In drugstores, the percentage of in-compliance is 77 percent.

In florists, the percentage of in-compliance is only 33 percent, but in that case we have only done three inspections in the florists, and one out of the three was in-compliance.

We have gained a greater understanding from SBA's testimony at our public hearings, from the hearing last September before the House Small Business Subcommittee and now from this hearing before the Senate this morning, on the extent of the misunderstanding and confusion that still exists about this standard. To the extent that this perception problem exists, OSHA agrees with the U.S. Chamber of Commerce. That may be a historical event right there. OSHA agrees with the Chamber of Commerce which has prefaced its Handbook for Employers' Guidance with the statement, "Compliance with the OSHA Hazard Communication Standard will not be as difficult as it first appears, if you start now and follow an organized approach. In fact, you may already have some procedures in place that comply with the standard."

We believe that OSHA has done a lot in reaching out to the small business community on this issue. Since last September 1, we have doubled our efforts to educate and inform the small business community about their responsibilities under this standard. Specifically, OSHA has distributed more than 300,000 copies of Chemical Hazard Communication, a pamphlet describing in simple language the requirements of the standard, published the pamphlet Hazard Communication Guidelines for Compliance based on a nonmandatory appendix which OSHA included in its August proposal, distributed new releases on various aspects of the Hazard Communication Standard to major news media nationwide and to trade, union, and professional media representatives.

Within a 30-month period ending last month, 246 major news stories about the Hazard Communications Standard appeared in the press, and OSHA has distributed to near 4,000 neighborhood newspapers a series of six camera-ready feature articles on the standard reaching a readership of nearly 2 million persons.

OSHA's onsite consultation services which OSHA offers through the States are available free of charge to employers in all 50 States. Priority in scheduling these consultation visits is given to small employers in high-hazard industries. More than 81 percent of the companies served by the consultation program in fiscal year 1988 had fewer than 150 employees. In 1988 more than 20,000 em-

ployers received assistance from OSHA-funded State consultants concerning the requirements of the Hazard Communication Standard.

OSHA has directed the State consultation programs to particular publicize the assistance available to small employers regarding the provisions of the hazard communication rule.

We also have a new Directions Training Program which has emphasized assistance to small business. Several of the grant recipients, nonprofit labor and business groups have used the funds to educate members about the Hazard Communication Standard. I will highlight a couple of those.

The Master Builders of Ohio, a construction employer association, uses a mobile classroom to provide hazard communication training at construction sites throughout Iowa. Their grant totaled $86,000.

The American Electronics Association. This employer association has developed a self-instructional Handbook on Hazard Communication Standard for Small Businesses and has conducted hazard communication seminars. Their grant is $48,000.

The National Constructors Association. This employer association's entire grant is devoted to developing and conducting training on hazard communication for the construction industry. Their grant totaled $138,000.

The Arkansas State AFL-CIO issued and conducts training for union members in a five-State area. One of its seminars is on hazard communication. Their grant amount was $146,000.

Last but by no means least, OSHA's field offices play an important role in reaching out to the small business community. A hazard communication coordinator in each of OSHA's 10 regional offices responds to public inquiries about the standard and provides assistance at workshops and other meetings.

OSHA staff in each of the agency's approximately 85 area and district offices are available to answer questions about the standard, deliver speeches on request to trade associations, local chambers of commerce and other business organizations and conduct seminars for groups of employers.

The agency provides speech materials and slides to each of its offices so that audiences will receive consistent, accurate, and complete information on hazard communication. OSHA believes that such localized efforts are more effective in reaching the small business community than more highly touted centralized programs.

OSHA's efforts have been supplemented by many private sector initiatives to help employers implement the requirements of the rule. Many are prepared free of charge by small business associations, and I suggest to you that the associations that have appeared here today will have prepared for their members such publications or pamphlets to instruct their members of their association. In fact, there is a rapidly growing industry of small business consultants, many of whom themselves are small employers who market a variety of materials to help small businesses among other things manage chemical inventories, prepare and maintain labels, Material Safety Data Sheets, and conduct training programs.

Finally, we believe that any burden that there may be in complying with this standard is well worth the injuries and the illnesses it

will prevent and the lives that it will lengthen. Nevertheless, from the evidence here today and at the hearing before the House Small Business Subcommittee last September, it is apparent that for some employers there is still much confusion about what is required under this standard. We welcome the Committee's suggestions in this regard.

Mr. Chairman, I refer the Committee to my prepared statement for a more complete account of OSHA's views on this issue, and I will be happy to try to answer any questions that you or any Members of the Committee may have. Thank you.

[The prepared statement of Mr. Carey follows:]

STATEMENT OF
LEO CAREY
DIRECTOR, OFFICE OF FIELD PROGRAMS
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
U.S. DEPARTMENT OF LABOR
BEFORE THE
COMMITTEE ON SMALL BUSINESS
UNITED STATES SENATE

June 22, 1989

Mr. Chairman and Members of the Committee:

Thank you for the opportunity to discuss the Hazard Communication Standard of the Occupational Safety and Health Administration (OSHA) and its effect on employers and employees in the small business community. With me at the table is Mr. Charles Adkins, OSHA's Director of Health Standards Programs.

OSHA welcomes the initiative of this Committee in examining the effect of regulatory requirements on small businesses. We understand the Committee's concerns about the special needs of small businesses in general, and specifically as they relate to compliance with OSHA's Hazard Communication Standard.

The Hazard Communication Standard

OSHA's publication of a final standard for hazard communication in November 1983 (48 FR 53280) represented the culmination of nearly ten years of rulemaking activity. The standard is a generic approach to ensuring that information is available to all exposed workers for all potentially hazardous chemical products. Initially, the rule applied only to

manufacturing establishments, since the evidence showed that the hazards were greatest in that sector. In August 1987, however, the standard was expanded to cover all workplaces where employees are exposed to hazardous chemicals. OSHA believes that all exposed employees are entitled to information to protect themselves from workplace exposures to chemical substances, regardless of the business' size or the number of chemicals involved.

The rulemaking record for hazard communication was the most extensive ever compiled for an OSHA standard. The length of the rulemaking can be ascribed to the complexity of the issues involved and the diversity of opinions on how the issues should be addressed. At the same time, there was virtually universal agreement on the need for the standard.

The standard is based on the premise that workers have a need and a right to know the identities and hazards of the chemicals with which they work, as well as the associated protective measures. There is strong evidence that implementation of the prescribed hazard communication program will significantly reduce the incidence of chemically-related illnesses and injuries in the workplace.

The Congress in 1970 recognized the importance of conveying hazard information to workers when it provided in the Occupational Safety and Health Act (OSH Act) that occupational health standards require employers to apprise employees of the

hazards to which they are exposed. Section 6(b)(7) of the Act states:

> Any standard promulgated under this subsection shall prescribe the use of labels or other appropriate forms of warning as are necessary to insure that employees are apprised of all hazards to which they are exposed, relevant symptoms and appropriate emergency treatment, and proper conditions and precautions of safe use or exposure.

In the Hazard Communication Standard, OSHA simultaneously addressed the hazards of the approximately half million chemical products in current use in American workplaces.

The standard requires chemical manufacturers and importers to evaluate the hazards of the chemicals they produce or import. This hazard evaluation process is the most technical part of the rule. It appeared to OSHA -- and the rulemaking record confirms that belief -- that the employers who produce or import chemicals should have the primary responsibility for providing information about those chemicals. Producers consequently must ensure that every container that leaves their workplaces is labeled with certain required information. They must also provide a comprehensive information bulletin, called a material safety data sheet (MSDS), with the first shipment of each chemical and with the shipment following each subsequent updating of the sheet.

To make certain that this information reaches all workplaces where employees are being exposed, participants in the rulemaking supported including distributors in the transmittal process. Thus, distributors also have a duty to ensure that labels are on every container and that data sheets are provided at the time of

the first shipment. This is the most efficient way to ensure that information is received before exposures begin. To prevent the occurrence of illnesses and injuries, the information must be in the hands of employers and employees prior to actual exposure.

The requisite information is to be communicated to workers in three ways -- through labels on containers, through material safety data sheets and through training. An employer's plan for implementing these provisions of the rule constitutes the facility's hazard communication program.

Labels provide a warning, a brief summary of the hazards of the materials, and an identification of the chemical products to allow access to more detailed information on the appropriate material safety data sheet. These sheets provide extensive data regarding the chemical (such as chemical identity, and physical and chemical characteristics), as well as critical information concerning the potential health effects, the way the chemical enters the body of exposed workers, recommended or required exposure limits, proper protective measures, and emergency and first aid procedures. MSDSs are designed not only for employers and employees, but also for physicians, occupational health nurses and other safety and health professionals. In the required training sessions, workers must be instructed on how to obtain and use the information provided and must also be informed of available protective measures in their workplaces.

Employers who merely use, rather than produce, chemicals can rely on the information provided by their suppliers. Most non-

manufacturing employers are in this category. The containers they receive are already labeled, and they are given a material safety data sheet at the time of the first shipment. The responsibilities of such employers are limited to establishing a hazard communication program to make the information available to workers and to train them to use it properly. Employers who are users and not producers of chemicals have no independent duty to evaluate the hazards of chemical substances. For purposes of their hazard communication programs, employers must simply obtain and maintain the information provided by their suppliers and train their employees. This is neither a complicated nor an onerous duty, considering the benefit to employees and to the employers themselves.

Material Safety Data Sheets, Labels, and Training: As noted, the required chemical information is to be communicated to workers in three ways -- through labels, material safety data sheets, and training. Our rulemaking record indicates that all three means of communication are necessary for the proper protection of workers.

At the time OSHA began its hazard communication rulemaking, a number of State and local governments already had right-to-know laws. While State and local laws differed, all of them had similar requirements for the communication of information, and generally they used the basic strategy of labels, material safety data sheets and training.

The concurrent use of labels and material safety data sheets to transmit hazard information is also becoming well-established internationally. A rule which is similar to our standard is now being implemented in Canada. A number of European countries have requirements for chemical-labeling and data sheets, and similar rules are being considered by nations elsewhere, for example, Australia. As we testify this morning, OSHA's Acting Assistant Secretary Alan McMillan and Ms. Jennifer Silk, the agency's hazard communication expert, are attending a conference of the International Labor Organization in Geneva where the issue of an international system for chemical hazard communication is on the conference agenda.

In its Hazard Communication rulemaking, OSHA considered, as an alternative to a requirement for both labels and material safety data sheets, the use of labels alone to provide hazard information to employees and employers. Testimony and evidence received during the rulemaking, however, indicated the importance of the differences between the two means of imparting information. The label provides an immediate visual warning; the data sheets provide more comprehensive and technical information about the hazardous properties of the chemical substance. The label reminds employees of the more detailed information available on the material safety data sheets. Together, they reinforce each other, and the formal training that is required for workers ensures that the information is meaningful. Effective communication is enhanced by repeating the information

in different forms. The public comment process convinced the agency that exclusive reliance on labels would not result in an effective hazard communication program.

There is strong evidence in the thousands of pages of testimony that have been recorded and the hundreds of public comments that have been received since 1977 (when the agency first began collecting information for a hazard communication standard) that detailed information about chemical hazards is best provided through material safety data sheets. Such sheets were not new. Employers and occupational safety and health professionals, including physicians and nurses, were accustomed to these documents and considered them essential. MSDSs had been in use in American industry for at least thirty years at the time the initial standard for manufacturing was issued. OSHA, in this landmark rule, consciously built on what already existed.

OSHA agreed with commentors that the inclusion of detailed information on labels would make them unwieldy and so difficult to read and understand that their value in providing immediate warning information would be diminished. OSHA also was concerned that damage by weather and rough handling could render the label information illegible and therefore useless.

The Hazard Communication Standard is a "performance standard" -- that is, a standard that is more concerned with results, or performance, than with specifications on how to achieve the desired result. A performance standard allows employers to choose the most suitable method for compliance. The

Hazard Communication Standard provides that material safety data sheets may be kept in any form, for example in a computer that may be accessed or on microfiche. Moreover, they can be designed to cover groups of hazardous chemicals in a work area where it may be more appropriate to address the hazards of a process rather than of individual chemicals. Under this performance approach, employers may use generic material safety data sheets, provided they contain the requisite information. Thus, employers may use generic or sample material safety data sheets prepared by trade associations for products commonly used in an industry, as long as the sheets contain the information required by the standard and present it in an accurate and understandable manner.

The Hazard Communication Standard is dynamic in nature in the sense that as new chemicals are introduced into the workplace and new information about existing chemicals becomes available, producers must update the information they provide their customers, and employers must update their hazard communication programs to reflect these new developments and to provide their employees with the vital information they need to protect themselves.

History of Expansion of the Standard: At present, OSHA is enforcing the standard while at the same time reviewing new public input suggesting improvements to its implementation and effectiveness.

The original rule, which was promulgated in November 1983, covered employees exposed to hazardous chemicals in the

manufacturing sector because, as I have explained, the evidence showed that the hazards were greatest in that sector. At the time, OSHA indicated it would later examine expanding the standard's coverage.

Public interest groups and labor unions challenged OSHA's initial decision to apply the rule only to manufacturing and argued that the standard should protect employees in all industries where exposures to hazardous chemicals occur. In May 1985, the U.S. Court of Appeals for the Third Circuit upheld the standard in most respects, but ordered the Secretary of Labor, among other things, to extend the standard's application to employees in the non-manufacturing sectors unless the Secretary could demonstrate that this course of action was not feasible. OSHA subsequently issued an advance notice of proposed rulemaking to collect public comments on the expansion of the standard and began to study in more detail the impact of such coverage on the non-manufacturing sector.

While OSHA was drafting a proposal to expand the standard's coverage, a second lawsuit by public interest and labor groups resulted in a May 1987 court decision directing OSHA to cease public rulemaking activities. Despite OSHA's arguments that additional public participation was appropriate, the Court ordered OSHA to issue within 60 days a standard applicable to all workers covered by the OSH Act, or to present a statement of reasons why, based on the administrative rulemaking record, such a standard was not feasible. OSHA re-evaluated the evidence in

the record and concluded that a modified standard was both necessary and feasible for all workplaces.

Accordingly, OSHA published a final rule on August 24, 1987, to cover all employees exposed to hazardous chemicals in non-manufacturing industries, as well as manufacturing. The expanded standard was also challenged, this time by industry groups. It has been upheld in all respects by the Third Circuit Court of Appeals.

OSHA recognized that the intervention of the court may have prevented some information regarding the feasibility or practicality of the standard's provisions from being included in the rulemaking record. Therefore, simultaneous with issuance of the final rule on August 24, 1987, the agency established a 60-day comment period on the final rule to permit interested parties to provide data or evidence concerning the feasibility or practicality of the provisions of the rule.

The Office of Management and Budget (OMB) also reviewed the expanded standard under the authority of the Paperwork Reduction Act. OMB determined that although most of the standard satisfied that Act, three provisions of the rule did not. These concerned material safety data sheets at multi-employer worksites; coverage of consumer products; and coverage of drugs which are regulated by the Food and Drug Administration. OMB also instructed OSHA to prepare a compliance assistance program to help employers understand and comply with the standard.

OSHA published a notice of proposed rulemaking on August 8, 1988, to address OMB's concerns. The notice specifically invited public comment on the disapproved provisions and on a few proposed modifications aimed essentially at clarifying the rule. The notice also announced that the agency would accept comments on the entire rule's application to non-manufacturing. OSHA held seven days of public hearings and received some 200 public comments and submissions. The comment period closed in March 1989. OSHA is in the process of reviewing this additional record evidence. In the meantime, OMB's actions are the subject of continuing litigation before the U.S. Supreme Court and the three disapproved provisions are in effect and enforceable by order of the Third Circuit.

Feasibility of the Standard: OSHA examined the feasibility of the rule as it applies to the non-manufacturing sector and found the requirements to be feasible. This examination included consideration of the costs to small businesses and also addressed such issues as turnover rates. According to OSHA's cost analysis, typical establishments in most industry sectors would incur compliance costs of less than $500 in the first year. In only one industry sector does the average total first-year cost exceed $800 per establishment. The average first-year cost per exposed employee is less than $100, or less than $2.00 per exposed worker per week.

Special Attention to Small Businesses

As with all OSHA's standards-setting activities, the Hazard Communication rulemaking was subject to the provisions of the 1980 Regulatory Flexibility Act, which requires that agencies study and, if at all possible, adopt regulatory alternatives for lessening the impact of rules on small entities. OSHA prepared two Regulatory Flexibility Analyses -- for the initial rule and for the expanded standard. Most of the regulated community consists of small businesses. Approximately 60 percent of manufacturing firms and 85 percent of non-manufacturing firms have fewer than 20 employees. It was, in fact, concern for small businesses that in part prompted OSHA to allow a two-and-a-half-year period between initial issuance of the Hazard Communication Standard for the manufacturing sector in November 1983 and the requirement for full compliance in May 1986. Other provisions of the standard were tailored to accommodate particular industries and the small businesses in those industries. For example, there are exemptions in the standard for certain manufactured articles, certain consumer products, and over-the-counter drugs. Work operations involving the handling of chemicals in sealed containers, and certain retail distributing operations, are not subject to the full requirements of the standard. It is important to remember, however, that the costs of implementing the standard relate mostly to the numbers of hazardous chemicals to which employees may be exposed at work, not to the size of a business.

There are limits under the OSH Act to the degree of flexibility that is allowed in according small businesses different treatment under agency standards. While small businesses may at times have difficulty complying with OSHA regulations, the OSH Act is clear that OSHA must use the most protective means feasible to prevent material impairment to employees' health, even though there may be substantial costs associated with compliance. In implementing the greatest degree of protection deemed feasible, OSHA can, and does, keep the impact on small businesses firmly in mind.

Over the years, we have addressed the special difficulties faced by small businesses in complying with the OSH Act in several ways. For example, employers of ten or fewer workers are not subject to OSHA's general recordkeeping requirements; they do not have to maintain the log of occupational injuries and illnesses which is required of most other employers. And we do not include them on our lists for agency-initiated, or "programmed," safety inspections in the manufacturing sector, although we conduct programmed inspections at small construction sites. OSHA conducts unprogrammed inspections in small firms in all sectors in response to reports of imminent danger, reports of fatalities and accidents involving five or more hospitalizations, and employee complaints of serious hazards. We also take into account the size of a business (along with other considerations such as good-faith efforts to abate hazards) in determining

whether reductions in fines for non-serious violations of the OSH Act are warranted.

Enforcement:

OSHA checks for compliance with the Hazard Communication Standard during every safety and health inspection. It has been the agency's experience that small businesses in the manufacturing sector -- where OSHA has now been enforcing the Hazard Communication Standard for three years -- have not had appreciably greater difficulty in complying with the standard than larger establishments. For the three-year period for which the standard has been enforced in the manufacturing sector (May 1986 - May 1989), OSHA conducted 51,031 inspections in firms, of which 26,349 employed 50 or fewer employees. During this period, 51.8 percent of these small businesses were found to be in compliance with the rule, whereas the compliance rate for businesses of all sizes was 58.6 percent.

It should be noted that approximately 50 percent of all employees in non-manufacturing sectors were covered under existing State laws at the time OSHA promulgated its rule expanding the scope of the Hazard Communication Standard. Enforcement experience in the States with pre-existing rules in non-manufacturing indicates that the rule's requirements are feasible, and that most employers are complying.

OSHA only began to enforce the expanded standard in August 1988. over the ensuing eight months, the agency has conducted 9,033 inspections in all the non-manufacturing sectors except

construction, and 5656 of these inspections were in establishments with 50 or fewer employees. Of those small employers, 74.2 percent were in compliance, compared to a compliance rate of 75.4 percent for businesses of all sizes. During the same period, OSHA has conducted 6235 inspections at construction sites, 4801 of which employed 10 or fewer workers. Of these small sites, 66.5 percent were in compliance, compared to a compliance rate of 67.3 percent for all construction sites.

During inspections of chemical manufacturers and importers, OSHA makes certain that the employer is supplying customers with labeled containers and material safety data sheets. If not, OSHA issues citations. During inspections of downstream users, if OSHA finds that the employer does not have a material safety data sheet when the label indicates that the chemical is hazardous -- and cannot document a good-faith effort to obtain the information -- the employer is cited and given a 30-day period to obtain the required information from the supplier. A copy of a letter or record of a phone call to the manufacturer or supplier is acceptable as evidence of having made a good-faith effort to comply with the standard. If the employer has not received the requested data sheets or labels within 30 days, OSHA contacts the manufacturer or importer by phone and certified letter to request the necessary information. In the same way, OSHA will assist any employer who experiences problems in obtaining material safety data sheets, regardless of whether an inspection is conducted. If the supplier or manufacturer fails to respond within a

reasonable period of time, the case is referred for inspection to the OSHA area office in the vicinity of the supplier.

Compliance Assistance:

As I have stated, OSHA recognizes the difficulty small employers may have in complying with the Hazard Communication Standard. The agency has a number of programs to help small businesses maintain safe and healthful workplaces.

Onsite Consultation Program: The primary focus of OSHA's onsite consultation program is small business. Initiated at the urging of the Congress in the late 1970's, the program's purpose is to provide technical advice to small employers, who generally do not have professional safety and health staff of their own, on how to provide safe and healthful places of employment for their personnel. These services are available free of charge, through State auspices, to employers in all 50 States. The program, which is 90-percent OSHA-funded in almost all jurisdictions, provides onsite or offsite advice to employers upon request, with priority given to small employers in high-hazard industries. More than 90 percent of the companies served by the consultation program in FY 1988 had fewer than 150 employees.

OSHA requires the State consultation programs to publicize the availability of the services they offer and to direct promotional efforts particularly to small businesses in high-hazard industries. Among the means States have used to make employers aware of the program are newspaper advertisements, direct mailings based on worker compensation data, contacts in

local chambers of commerce, and public service announcements on television and radio.

Consultants are prepared to assist employers in complying with any of OSHA's standards; in 1988, hazard communication was one of the standards most frequently discussed during consultation visits. Of the employers who were provided with assistance from October 1, 1987, to December 31, 1988, 20,085 were assisted with hazard communication.

OSHA has directed the State consultation programs to highlight in their promotional efforts the consultative assistance they can offer small employers in meeting their hazard communication requirements.

New Directions Training Grants: From its outset in 1979, OSHA's New Directions education and training grants program has emphasized assistance to small businesses. Among the criteria for evaluating applications for New Directions grants has been the ability of the prospective grantee to serve small businesses. As a result, many of the organizations and universities funded under this program are now serving workers and employers in small business enterprises. For example, the Master Builders of Iowa, a construction employer association which received a training grant from OSHA, uses a mobile classroom to provide hazard communication training at construction sites in Iowa. Another of the grant recipients who have used New Directions funds to instruct members in hazard communication is the Arkansas State AFL-CIO, which in a five-state area conducts a training seminar

for union members in a five-state area on the provisions of the standard and how they relate to the chemical hazards found at particular worksites.

Information and Outreach: The agency has published more informational material about hazard communication and has provided more outreach services for this standard than for any other regulation in the agency's history. Agency staff have responded to literally tens of thousands of telephone inquiries and many hundreds of letters concerning the rule.

- To ensure that all of OSHA's hazard communication publications receive the widest possible distribution, the agency has waived the normal limitation of one publication per request.
- A "Hazard Communication Compliance Kit," which outlines the standard and gives simple steps for complying with the regulation, is available from the Government Printing Office for a nominal fee. The kit is furnished in the form of a looseleaf notebook so that employers can add materials of their own such as a written hazard communication program, copies of MSDSs, and training records.
- OSHA has distributed more than 300,000 copies of Chemical Hazard Communication, a pamphlet describing in simple language the requirements of the standard. In December 1988, the agency published a pamphlet, Hazard Communication Guidelines for Compliance, based on a non-

mandatory appendix (which OSHA had included with its August 1988 proposal to clarify and review certain elements of the standard for the non-manufacturing sectors). The appendix is intended as guidance to employers in complying with the provisions of the standard. The appendix provides a simplified outline of the steps an average employer needs to follow to meet the requirements of the standard. To reach small business employers who do not have regular access to the Federal Register, OSHA made the appendix available, free of charge, in easy-to-read pamphlet form. These publications are available free of charge from any OSHA office. Both have also been translated into Spanish versions which will be available shortly. An important part of the mission of OSHA's field offices is to make sure that new publications like these reach the employers and employees they were designed to assist.

- A Hazard Communication Coordinator has been designated in each of OSHA's ten regional offices to respond to public inquiries about the standard and to provide assistance at workshops and other meetings. This is the first time that OSHA has provided regional coordinators for a single regulation.
- OSHA staff in each of the agency's approximately 85 area and district offices and in OSHA-approved State plan States are available to answer questions about the

standard; deliver speeches on request to trade associations, local chambers of commerce, and other business organizations; and conduct seminars for groups of employers. The agency provides speech material and slides to each of its offices so that audiences will receive consistent, accurate, and complete information on hazard communication.

- OSHA has distributed news releases on various aspects of the hazard communication standard, as is customary for any major agency activity. Each of these news releases is distributed to major news media throughout the country and to a wide variety of trade, union, and professional media representatives. Our distribution list includes organizations such as the Federation of Independent Business and publications such as Small Business Report. A recently completed review has shown that within a 30-month period ending last month, 246 major news stories about the Hazard Communication Standard appeared in the press.
- The agency has distributed to nearly 4,000 neighborhood newspapers a series of six camera-ready feature articles on the standard. These articles, which covered aspects of the standard such as labeling, MSDSs, and written hazard communication plans, reached a readership of an estimated 1.8 million persons. The neighborhood newspapers are considered one of the best ways to

communicate with the diverse small business community. In fact, many are used by small businesses for their own advertising.

Several of the States that operate their own OSHA-approved job safety and health programs have also instituted notable outreach programs. Maryland, for example, has distributed thousands of copies of a model hazard communication training program. New Mexico has mailed a special bulletin on hazard communication to 33,000 employers in the State; and Michigan has distributed more than 60,000 information packets describing the State's hazard communication requirements.

OSHA has worked with the Small Business Administration (SBA) to disseminate informational material on hazard communication through SBA field offices. At the agency's public hearing on the expanded rule last December, SBA acknowledged our cooperation in coordinating outreach efforts and noted that not only were we working to make our informational materials more suitable for small businesses but we were also distributing them more widely than in the past.

OSHA's efforts have been supplemented by many private sector initiatives to help employers implement the requirements of the rule. In fact, there is a rapidly growing new industry of small business consultants, many of whom are themselves small employers, who market a variety of materials, mostly of high quality, to help small businesses manage chemical inventories, prepare and maintain labels and material safety data sheets,

conduct training programs, and provide a myriad of other related services. While OSHA does not recommend or endorse specific products or services, we have made a list of such resources available to employers who want to know about sources of private sector assistance.

Benefits of the Standard

The benefits of the standard result from an expected reduction of occupational injuries and illnesses which are chemically related. OSHA projects that the standard will prevent 20 percent of the injuries and illnesses that would have occurred without the rule. The effect on chronic illnesses and cancers will not be seen immediately because of the long latency period for such diseases. The impact on these cases will occur over a longer time period.

It is clear that the benefits of improved communication of chemical hazards to workers are well worth the effort such communication takes. We recognize, however, that for some employers the initial effort called for may appear to be overwhelming. That is why we have instituted the outreach efforts I have described this morning. It is clear that many employers -- and particularly small business employers -- need some degree of assistance in complying with the standard.

This hearing has been most helpful in that regard, as was the hearing held last September by the House Small Business Subcommittee, which Congressman Sisisky chairs. In fact, a

number of our information activities were begun after that hearing.

While we are proud of the major efforts we have made to assist small businesses in complying with the Hazard Communication Standard, there may be more that we could do to help employers without diminishing worker protection. We welcome the Committee's suggestions.

That completes my prepared remarks, Mr. Chairman. I will be happy to answer any questions you or members of the Committee may have.

QUESTIONS FROM SENATOR WALLOP FROM MR. CAREY

1. Does OSHA have any plans to improve their outreach programs--such as making video tapes or establishing a small business ombudsman--to inform small businesses about the hazard communication standard?

As described in the agency's testimony at the Committee's hearing on June 22, 1989, OSHA has taken a number of steps to inform small businesses of their requirements under the Hazard Communication Standard. These efforts constitute the largest and most comprehensive public information effort ever conducted by OSHA for a new job safety and health standard. Among its hazard communication outreach activities, the agency has responded to tens of thousands of letters and hundreds of telephone calls about the standard; distributed hundreds of thousands of copies of publications about the rule; issued a Hazard Communication Compliance Kit which outlines the standard and gives simple steps for complying with its provisions; waived its normal limitation of one OSHA publication per request; made numerous speeches and personal appearances to discuss the standard; and established a Hazard Communication Coordinator in each OSHA Regional Office throughout the country to serve as an informational resource on the standard.

OSHA realizes that even this level of effort may not be enough to meet the information needs of small businesses, and is planning a number of new hazard communication initiatives to augment its existing activities, as described in our response to Question 2. OSHA also is considering the establishment of a small business ombudsman to serve as the agency's point of contact for all issues of interest to the small business community. Although we have not yet made a final determination on this matter, we will be sure to let the Committee know of our decision as soon as possible.

2. If so, can you tell me what those programs might consist of and how soon they might begin?

OSHA is planning a number of new initiatives so that employers and employees may be better informed of their obligations under the Hazard Communication Standard. These projects are in varying stages of development; the Committee has OSHA's fullest assurance that they will be implemented as soon as possible.

The agency is developing a special outreach program on hazard communication in which OSHA will actively seek audiences for approximately 700 seminars about the standard over the course of a year. The seminars will be conducted by staff from each of OSHA's 85 area and district offices, personnel from the 23 States and territories which operate

their own OSHA-approved safety and health programs, and staff from OSHA-funded State consultation programs, which are located in all 50 States. This special effort will supplement the hundreds of seminars and speeches already provided upon request to OSHA, which routinely include information on hazard communication.

OSHA will encourage its field staff and State enforcement and consultation personnel to arrange radio and television talk-show appearances and interviews with editors of print media to discuss the standard. We expect this effort to result in a minimum of 2,000 talk-show appearances and news stories.

OSHA is planning to direct its field offices to undertake a special effort to encourage local news sources to publish information about the standard. This effort will supplement the agency's current practice of providing OSHA news releases and other information to the several thousands of addressees on the agency's general mailing list.

OSHA also is considering the development of a camera-ready feature story on hazard communication for inclusion in newsletters and magazines published by unions, trade groups and professional associations. To accompany the feature story, OSHA would prepare several inserts on various aspects of the regulation and a list of references so that readers can obtain additional information on the Hazard Communication Standard. OSHA would make these materials available to OSHA field offices for additional distribution to the public, on request.

3. Would you be willing to work closely with the Small Business Administration to revise this standard so that it is not quite so cumbersome for small businesses?

OSHA will continue to work closely with the Small Business Administration (SBA) on the Hazard Communication Standard as it has throughout the history of the rule. SBA participated in the development of the original standard in 1983, which covered employers in the manufacturing sector, submitting comments that were largely supportive of the performance-oriented approach adopted by OSHA. SBA also worked with OSHA in the development of an expanded standard to cover employers in non-manufacturing industries, providing comments both before and after the publication of the expanded rule in 1987. OSHA also worked with SBA in the development of a number of the outreach programs described in the response to Question 1. SBA reviewed OSHA's Hazard Communication Compliance Kit during its development, provided suggested revisions to OSHA publications about the standard, and agreed to distribute OSHA materials through SBA field offices.

On August 8, 1988, OSHA published a notice of proposed rulemaking (NPRM) to consider modifications to the 1987 expanded rule. The agency specifically invited public comment on those provisions of the standard disapproved by the Office of Management and Budget under the authority of the Paperwork Reduction Act. OMB had determined that although most of the standard satisfied paperwork requirements, three provisions that apply to many small businesses did not: the requirement for material safety data sheets at multi-employer worksites, coverage of consumer products, and coverage of drugs regulated by the Food and Drug Administration. OSHA also considered comments on several modifications aimed at clarifying the rule and the issue of the standard's application to the non-manufacturing sector, which includes many small businesses.

OSHA received about 200 comments and submissions and held seven days of public hearings. SBA was an active participant in this process, submitting comments on the proposal and presenting testimony at public hearings. The agency will carefully review SBA's comments and those of many others who responded to the NPRM as OSHA develops its final rule. The final rule will be based on the entire rulemaking record developed during the many years OSHA has worked on this issue, and will contain provisions to ensure that workers exposed to hazardous chemicals are protected to the extent feasible.

The CHAIRMAN. Thank you.

Let me say anytime you have a rule that is as comprehensive and complex as this, consultants are going to crop up. One of the things that concerns me is that there will be a lot of scams. Small business people are the easiest prey in the world for consultants when the small business person does not understand something as complex as this rule, and they do not want to pay $10,000 fines. They do not want to face any kind of fines. So, they have a tendency to fall for that.

I applaud your efforts to communicate to the business community and the corporate community of this country and even the small business community through training grants, media speeches and seminars. Those are all laudible. But all of those communications, no matter how comprehensive and extensive they are, will not make confusing rules good, nor will they make them understandable when they just simply are unfathomable.

While I appreciate your defense of this rule, let me go to one other point. So far as these seminars to trade associations are concerned, do you know what percentage of small businesses in this country belong to trade associations?

Mr. CAREY. No, sir.

The CHAIRMAN. I am not sure either, but it is less than 50 percent. That is not a solution. It is a partial solution. I agree with you, the last statement you made, that all these things are worthwhile. Staff tells me that probably less than half of the small business community in this country belong to a trade association. I tell you, if you looked at our mail, you would think they all did. [Laughter.]

But the point I want to make is on the steelworkers case in the Third Circuit from which no appeal was taken——

Mr. CAREY. There was an appeal taken.

The CHAIRMAN. Was not the Third Circuit final on that?

Mr. CAREY. There was an appeal taken to the Supreme Court. The Supreme Court decided not to hear the issue.

The CHAIRMAN. There was a petition for certiorari that was denied?

Mr. CAREY. Yes.

The CHAIRMAN. Did not the Third Circuit say in the decision you were relying on that you promulgate a rule for nonmanufacturing concerns? But they did not say you had to promulgate the same rule which is what you have done.

Mr. CAREY. I do not think we have promulgated the same rule. I think we have made adjustments to the rule, No. 1, and No. 2 was to look at what the Third Circuit said in their decision, although that is technically correct. They must promulgate a rule. It is really reading that out of context and certainly out of historical context of what the Third Circuit had been ruling up to that point then instructing us to do, it is the judgment of the solicitor of labor as well as the OSHA administrator that, in fact, the court did require us to issue this particular rule, expand this particular rule.

The CHAIRMAN. Is it true that nonmanufacturers in this country are in compliance to a higher degree than manufacturing firms are?

Mr. CAREY. It is similar.

The CHAIRMAN. I think you have a 10 percent higher compliance record with nonmanufacturers, distributors, retailers, and so on, than you have with the manufacturers, which is what the law was originally designed to cover.

Mr. CAREY. Our data supports what you say.

The CHAIRMAN. Why is that?

Mr. CAREY. I would like to believe, although there has been no specific study on it, I would believe that the complexity of complying with the hazard communication is much greater in a manufacturing area where there exists more hazardous substances, and the likelihood of releases of hazardous substances is much greater than in nonmanufacturing. This is consistent with what OSHA said when it attempted to first regulate in the manufacturing and not regulate in the nonmanufacturing area. So, I think that that is consistent with our belief at the time we first regulated it.

The CHAIRMAN. If a manufacturer of toothpaste—and we have had this actual case communicated to our office—if a manufacturer of toothpaste sent an MSDS to the wholesale druggist along with the toothpaste, is the wholesaler obligated to send that along to the retailer and is the retailer obligated to give that to the consumer of the toothpaste?

Mr. CAREY. No, those are consumer products, and they would not be required to do that under the standard.

The CHAIRMAN. Why would a manufacturer of toothpaste send a distributor an MSDS on toothpaste?

Mr. CAREY. I think you will have many manufacturers of many substances that are creating MSDSs and forwarding them along—not that they are not required to do so under the OSHA standard.

The CHAIRMAN. Let me ask you a separate question, then. Sometimes a product might be hazardous if used in a certain way, but if you use it in a conventional way, it is not hazardous.

Now, I understand that OSHA does not make any distinction between the two if there is any potential damage or danger in the use of a product in a way that was not intended. As I understand it, they are obligated to keep records on that product.

Mr. CAREY. If it is a consumer product and it is used consistent with the way your consumer would use it, then they are not required to keep those kinds of records.

The CHAIRMAN. I want to be sure of that. You are saying even though a consumer product might be dangerous if used in a way that was really not intended, maybe bleach that you put in a washing machine or something——

Mr. CAREY. Let us take bleach as an example. If bleach is a consumer product and an employer is using bleach consistent with the way a consumer would use bleach, then their requirements do not apply.

The CHAIRMAN. How about kids who sniff glue? Some glue that normally would be used to put two pieces of paper together but can be highly dangerous to a child who sniffs it. Are they required to keep an MSDS on that?

Mr. CAREY. If they are using the glue as a consumer product and consistent with the way a consumer would use it, no.

The CHAIRMAN. That is OSHA's present rule. If it is used in the normal way for consumers, even though it can be highly hazardous

if misused, the retailer and the wholesaler have no obligation to keep anything on file on that?

Mr. CAREY. That is correct, consistent with the way—I am sorry, I am talking about the employer. The wholesaler and retailer still has to keep it, that material on file because the end use is what determines whether or not the rule applies.

The CHAIRMAN. Then the ultimate user of this product is not protected even though the wholesaler is going to keep something on file. Why would he have something on file? He is not going to use it.

Mr. CAREY. The wholesaler will have customers through the retailer that may use it in a fashion inconsistent with that way a consumer uses it. For instance, let us take glue. A consumer does not use glue 8 hours a day and does not use glue in large volumes. A consumer uses glue to put two pieces of paper together. And when that glue is used by an employee of an employer to put two pieces of paper together, then they are not covered because that is consistent with the consumer use. But if an employee of that same employer using the same glue is using that glue 8 hours a day in a small room, over and over, 40 hours a week and that glue contains a hazardous substance, then that employee is not using it consistent with the way a consumer would use and, therefore, would be covered.

Now, the retailer and particularly the wholesaler has difficulty, I agree, in determining the end use, so they will have customers that will use as a consumer product and therefore, the customer would not be covered, but they will also have customers that will use it in the fashion I am talking about of 8 hours a day, 40 hours a week. And in that case, they must pass a Material Safety Data Sheet on to that customer. That is a difficult burden to put on the wholesaler, but it requires the wholesaler and retailer to keep it.

The CHAIRMAN. There is a whole body of tort law in this country and I think virtually every State in the country uses it. Certainly when I was a trial lawyer I understood that under tort law you are not normally liable if a consumer uses something in an unintended and unforeseeable way.

Now, you are going further than that. You are saying that they have got to keep records just in case somebody does use it in an unintended way.

Mr. CAREY. We are not saying a consumer. We are saying the employer. The employer—obviously if an individual employee uses something——

The CHAIRMAN. But there again, I do not care whether it is a consumer or the employer. Are you saying that if an employer fails to tell an employee that he must not use this in some way, and he has to keep a record on it if it could have an adverse effect on somebody if used in an unintended and unforeseeable way?

Mr. CAREY. Not unintended and not unforeseeable, no. But clearly employers who utilize consumer products in ways inconsistent with how a consumer would use it in that the employer does that and that is not unknowingly and that is not unintentionally, that is intentionally, and that an employer does it and uses a consumer product in that fashion, then the employer is required to have Material Safety Data Sheets and instruct the employee in the proper

use, the hazards associated with the use, the proper way to protect themselves, and the symptoms that may arise from overexposure to that substance.

The CHAIRMAN. What if there is no MSDS because the manufacturer does not intend for that product to be used improperly? What if an employer is using a product that is made by a manufacturer, a perfectly legitimate product, and 99 percent of the use of it is in a certain harmless way, and it is not manufactured with any view of its being used in the way this employer is going to use it. So, therefore, the employer or the manufacturer does not even have an MSDS on it. Why would an employer have one if a manufacturer does not have one?

Mr. CAREY. The manufacturer would be required to have an MSDS in that case.

The CHAIRMAN. How could a manufacturer have an MSDS on a product that he never intended or never dreamed anybody could misuse?

Mr. CAREY. If there is a hazardous chemical in the product that would be released, then the manufacturer must prepare an MSDS.

The CHAIRMAN. Senator Kasten.

Senator KASTEN. Mr. Carey, could you go back to your prepared statement, the second paragraph from the end, and reread those lines talking about the rapidly developing industry.

Mr. CAREY. OSHA's efforts have been supplemented by many private sector initiatives to help employers implement the requirements of the rule. Many are prepared free of charge by small business associations. In fact, there is a rapidly growing industry of small business consultants, many of whom are themselves small business employers, market a variety of materials to help small businesses among other things manage chemical inventories, prepare and maintain labels and Material Safety Data Sheets, and conduct training programs.

Senator KASTEN. You are using that statement in support of this process. Are you saying that somewhere, somehow in the OSHA rules or somewhere in the Department of Labor, it is taken care of, but what we want you to be doing is to be developing regulations that are so confusing and complicated that we have to develop a new business to deal with them, and you are saying this is one of the pluses of what you hear today? You are telling us this is a good deal because this is so tough that average people cannot do it? We are going to have other people, and some of these people are in fact small businessmen and businesswomen themselves. Is that what you are saying to us today?

Mr. CAREY. No.

Senator KASTEN. This is a great deal. This is so complicated that we are going to provide more jobs for people; it will become a rapidly growing industry, and some of the jobs might to to small businesses?

Mr. CAREY. This is a complicated rule.

Senator KASTEN. You are not answering my question.

Mr. CAREY. No, sir. I am not saying that is the basis that we are coming forward to say this is a good idea, because it is a small business industry developing, no.

Senator KASTEN. If you are not coming forward and saying that, why is that included in your prepared statement?

Mr. CAREY. That is a fact that information is getting out is the point that I am trying to get out there. People take advantage of whether it is a complex rule or not. The market forces will be such that people will take advantage of Federal rules and changes in the environment to develop this.

Senator KASTEN. In your view does OSHA not have a responsibility to be providing that information?

Mr. CAREY. Absolutely.

Senator KASTEN. Why, then, has OSHA not done what the Environmental Protection Agency has done, and I will read from the small business testimony. They are saying EPA has consistently done a good job in promoting its rules among the regulated community, and then it goes on to suggest where you are not or have not done a number of different things that other Government agencies have done.

Why is it that you feel that you deal in this area in an adversarial sort of way and just hammer the employees or the employers as opposed to trying to work with them? Why do you not also take the effort when you come up with this rule to do what this rapidly growing group of small business people is doing? Why is that not your responsibility? Why are you not doing that?

Mr. CAREY. It is our responsibility. We are doing it. We do not agree with what the SBA counsel has testified to. We do believe that there is more to be done. There are other alternatives. We welcome your suggestions in those areas. We have not just taken this on an adversarial standpoint and begin to enforce this without working with the business community, with the small business community with outreach programs, with pamphlets. We, again, as I went through, we have our local offices working on this. We have the consultation programs, people working with this. The enforcement effort is, to date, a relatively small effort compared to the Outreach Program. That does not mean that there is more to be done that we cannot do more and in hindsight maybe should have done more, and we will do more. We would like to get more suggestions. We work with SBA. We start with SBA, we start with OMB, and we talk to them about our Outreach Program. And they agree to the extent that the Outreach Program that we had, they agreed that was a good program.

Senator KASTEN. Could you go back to your testimony where you talked about the percentage of people that were complying? I did not write down all those numbers. Just give me a few of them.

Mr. CAREY. In SIC 2700, which is the printing, publishing, and allied industries' manufacturing industry, our inspections indicate that 56 percent of the industries—the facilities that we inspected in that industry were in compliance with the Hazardous Communication Standard.

In the construction industry, which we have only been enforcing since March 17 of this year, our inspections indicated that 67 percent of the contractors inspected in that industry were in compliance with the Hazard Communications Standard.

In the SIC 5122, wholesale distribution of drugs and in these areas we start getting into very small numbers of actual inspec-

tions mostly as a result of employee compliance. The in-compliance rate was 60 percent.

Senator KASTEN. You can stop right there. I just want to make the point that I think is stronger than the point that you are making. What you have in the printing industry is a regulation in which 44 percent, almost half of the people, are not in compliance. What you have in the construction industry is a regulation that one third of all the people in the construction industry are not in compliance with.

I think that these numbers—and in drugs it is over 40 percent. I think if you take your numbers and turn them inside out and show that you have got something here that is very, very difficult and tough and when you have got those kinds of numbers of people who are subject to your fines—now, I do not know how many people you are fining and what you are doing with them, and I am not going to get into that because I do not have the time. However, we might address that in questions that we will submit to you to get information from you concerning how many people you have been fining and what you have been doing, and if you give them warnings and how you work with them. In the beginnings of OSHA you did not have much of a track record on that. It has gotten a little bit better, at least in certain areas in Wisconsin.

My understanding is that the OMB issued disapprovals of three provisions, the three that we have been concentrating on here. They issued a disapproval on the consumer product part of it, they issued a disapproval on the multi-employer worksite part of it, and they issued disapprovals on the FDA-regulated drug products.

Your notices of proposed rulemaking did not propose changes in the areas of consumer products, multi-area worksites and the proposed language requiring articles that were inconsistent with the agency's previous position.

They said it was wrong. They said it was not workable. Why did you not work with those disapprovals?

Mr. CAREY. Let me turn it around a little bit and say that means OMB did approve everything else in the standard as you turn around the enforcement data.

Senator KASTEN. I do not think OMB ever did issue an approval. I think they issued three disapprovals.

Mr. CAREY. As a matter of fact, they did issue an approval of the rest of the standard.

What we did was announce the rule and raise those issues, although we did not change the rule, we made some accommodations in the rule, but not as substantial as perhaps OMB would have suggested. But we did in the proposal raise those issues as the subject of public hearings and, in fact, have held public hearings on those issues as well as any other issues that may be associated with the amended rule.

So, although we did not in the final rule address those changes, we did raise them in the public hearing as issues and, in fact, heard discussions on each one of those in the public hearing.

Senator KASTEN. I understand you heard discussions. I did not ask that. Why did you not simply follow OMB's disapprovals?

Mr. CAREY. We did follow what OMB told us to do, we raised those issues, and the final rule is not yet decided upon. We held

hearings, we closed the record in March of this year, and we are reviewing the record of those hearings. We have not made a final decision on the issues raised in those hearings.

We do have a final rule that is being enforced, and we did so as a result of the court order, but we still recognize that because of the court order, we were in a short time period, and there were issues that needed to be raised, and we raised them in this public hearing. That process is still ongoing. We have not issued our final decision as a result of those hearings yet, and those issues were raised, and we will be reviewing the record of those hearings and making a final decision, hopefully, shortly.

Senator KASTEN. The Small Business Administration witness and the Chairman raised the question about the literacy rates and what you are doing with this very complex problem. I read the MSDS for Diet Pepsi that is in our proposals here because of the saccharin. Even I can read that one and understand it.

What is it that drove you to this extremely complex formulation of these rules? Obviously that might be part of the rapidly developing industry, because there are only a few people that can write this way, and they are specialists. But when you get down to a jobsite, do you think anybody is going to be able to read this way?

Mr. CAREY. To answer your question, what drove us to it is the public hearing and all the comments on the record of that public hearing with regard to at the jobsite, and I would agree that that is where the rule is either going to be effective or not, is at the jobsite. It is not our intent that the MSDSs be the training document for employees, that employees only read the MSDSs as a way of getting trained.

The important thing for employees is the training, not the document. The document serves as the basis for knowledge for the person doing the training and serves as a backup source of information for employees if they need to get it because they are having symptoms or because they have some concern about their exposures, but that is a misunderstanding. That document is not designed to be read by the employees. That document is designed to provide information so an employer can train the employees in the proper way.

It is very consistent with what the Chairman said about why can we not do it by training the employees on what they should be afraid of, how they could protect themselves. It is very consistent with what the Chairman pointed out before.

Senator KASTEN. When your inspector comes onto a site, your inspector does not have the time or the interest to go and see how well you all have been trained. Your inspector is going to go find the file cabinet somewhere and try to see how many products or how many things that are being used in the workplace are there that do not have a matching piece of paper and fine so many dollars for every piece of paper that is not there.

You are not going to be able to go in there and find out how well the training program works. I would maintain that you ought to be asking employers to do the training, and you ought to be working with employers to do the training in a cooperative effort as opposed to this adversarial system that you are setting up which is going to make them spend all their time worrying about whether they have

got these damn documents and trying to protect themselves as opposed to really working with and training their employees.

Let me just ask one final question. On this jobsite question you say or the rule says that these documents have to be at the jobsite, is that correct?

Mr. CAREY. They have to be available to employees at the jobsite, yes, Senator.

Senator KASTEN. Available to the employee at the jobsite?

Mr. CAREY. Yes, Senator.

Senator KASTEN. Now, what happens when a subcontractor comes on when it is another group? Let us say we have got the Bumpers Company and the Kasten Company and the two of us are doing the job. Now, all of a sudden, we bring in the Smith Company. Now, do we stop our work until the Smith Company files their documents? Do we wait and see how many of the documents Bumpers and I already have that Smith does not have? What are you suggesting here?

Mr. CAREY. The most efficient way to do that, like other documents that have to be shared on a multi-employer worksite, whether they are engineering documents or anything else, is at a central place and that it be done in advance of coming onsite because it has to be done prior to the training. The training of employees has to be done before they use the product. But certainly that—your scenario—anticipates that employees be required to use these products without training. There does have to be some sharing of information prior to just showing up at the jobsite, but this is not unique to hazard communication. There has to be some sharing of information about other parts of what is going on at that jobsite about engineering documents and other documents that employers must share at multi-employer worksites. We think a central repository of some sort would be better than each individual subcontractor as being described as having a file of their own.

Senator KASTEN. Are you suggesting this multi-site paperwork burden is similar to the fact that all contractors have to share a similar architectural plan or all contractors have to share a similar engineering plan?

Mr. CAREY. I am not saying the burden is the same. I am saying there is a system for information sharing already existing, and this standard can build upon that system to accomplish its means.

Senator KASTEN. How much is this going to cost? What is the compliance cost of this issue? I saw some numbers of $100 and $500 somewhere in one of these, and I do not believe those. Is that what you maintain? Maybe it was not in your testimony.

Mr. CAREY. SBA estimates that the standard would cost $1.7 billion in the first year. Our estimate is $687 million in the first year.

The CHAIRMAN. We have to conclude this hearing in exactly 1 hour, so we are going to have to confine all the rest of the witnesses to 5 minutes. I regret that, but we have a series of votes starting. We will not be able to resume the hearing.

Mr. Carey, one final question. Is an employer liable for illegal use of a product?

Mr. CAREY. Liable under what sense? Liable as to OSHA or workmen's compensation?

The CHAIRMAN. If a manufactured product is going to be used in a certain way 99.9 percent of the time, but it could be used in an illegal way that could be hazardous to one's health, would the employer have to keep an MSDS on that?

For example, chlorine bleach is used to process cocaine.

Mr. CAREY. Who is the employer here?

The CHAIRMAN. The manufacturer. Is he going to tell the distributor and the distributor tell the retailer that this could be dangerous if you use it to process cocaine?

Mr. CAREY. No, sir. There would be no obligation to say it is dangerous if you use it to manufacture cocaine.

The CHAIRMAN. Or any other illegal use?

Mr. CAREY. I do not believe so.

The CHAIRMAN. Thank you, Mr. Carey.

Our second panel is Mr. Ronald J. Streck, vice president of government and public affairs, National Wholesale Druggists, Mr. Benjamin Cooper, senior vice president of government affairs, Printing Industries of America, Mr. Stephen George, Haussner's Restaurant, Baltimore, MD, representing the National Restaurant Association, and Mr. Don Flowers, president of Don Flowers Florist, Randallstown, MD, representing Florists Transworld Delivery, and Society of American Florists.

Gentlemen, I regret very much we are going to have to strictly enforce the 5-minute rule, because we must conclude, and I want every witness to get an opportunity to testify. It will still give us a chance to ask a few questions.

Mr. Streck, your name is first on the list. Would you please commence.

STATEMENT OF RONALD J. STRECK, VICE PRESIDENT OF GOVERNMENT AND PUBLIC AFFAIRS, NATIONAL WHOLESALE DRUGGISTS

Mr. STRECK. Thank you, Mr. Chairman. I will be as brief as I possibly can. To set the record straight, OMB did disapprove portions of the Hazard Communication Standard. The Third Circuit Court of Appeals overturned OMB's disapproval of portions of the OSHA rulemaking, specifically that portion addressing FDA-regulated drugs.

Now, the Solicitor General of the United States as well as the Solicitor of the Department of Labor and General Counsel to OMB petitioned the Supreme Court—that was No. 88-1434—to issue a writ of certiorari to hear this case. The Supreme Court has granted that petition, and briefs are due from the Government petitioners on June 27, 1989.

As Mr. Carey said, OSHA's final rule is still pending, and we hope that OSHA will agree with OMB's disapprovals. We think they make good sense, especially with regard to prescription drug products, the issue which I wish to address today.

There is a real problem that manufacturers as a result of product liability and also as a result of their inability to appropriately apply the rule itself because of the way it is written to determine just which products require Material Safety Data Sheets.

That is why you have the Pepto Bismol example. Although OSHA has attempted to make it clear that those consumer products do not require MSDSs, it is also abundantly clear from the 15 volumes of MSDSs that one of our members has received from manufacturers, each one being over 3 inches in thickness, that manufacturers cannot make that determination today.

They are concerned because their liability through the OSHA Hazard Communication Standard as well as product liability may ensue as a result of not having an MSDS.

So, we are finding MSDSs on all products. And, as a result, our wholesalers cannot walk away from the liability of reproducing those MSDSs and forwarding them on.

Our members do not have the clinical or the scientific expertise to be able to determine which products require MSDS! Rather, they must pass them on, and that is why we are saying an average of—we are projecting that we will see over $10 million per distribution center just to meet the requirements of OSHA Hazard Communication Standard if it is not modified to meet OMB's disapprovals. That is why we have a problem today.

We would like to suggest something. Our members' customers are small business people. They are retail pharmacies primarily, independent stores. They have a real quandary in front of them. If the wholesaler sends them 15 volumes which we believe could turn into 50 or 60 volumes, each 3 inches thick in the future as this rule is finalized, where will they place them? What will they do with them? How can they use them?

Most of the information found in those MSDSs is also found in professional package inserts which accompany each prescription drug product that is distributed by the manufacturer through the wholesaler to that retailer.

Now, you have a retailer who already has scientific information in front of him through a professional package insert which accompanies each product. That is the information which makes sense to a scientist, to a pharmacist, to a physician. It is not a Material Safety Data Sheet, nor is it possible for that pharmacist to be able to find the space to maintain that amount of paper in his independent retail pharmacy.

We think by far the most sensible approach with prescription drug products is to allow FDA to use the authority it has today, and that is to review all products under their auspices for safety and efficacy, which they do every day. Rather than second-guess their decisions with regard to the safety of products, allow them to proceed.

And if FDA finds that a particular product requires additional labeling requirements in that professional package insert, allow FDA to make that decision. They are looking at products that are all consumed by patients, by consumers today. You either ingest the products or you apply it to your skin. What greater exposure can there be for those products?

I think the FDA has already made a decision with regard to those products and in those areas where OSHA feels that the decision is not complete, we would suggest that OSHA sit down with FDA to discuss that and discuss the workplace. Rather than allow the incredible additional burden, the additional expenses to occur,

OSHA and FDA should sit down and find an appropriate alternative.

Another problem with the Hazard Communication Standard is one Government agency can contradict or at least frustrate another. We have a regulation that the HCS requires additional reporting. We have another regulation or an act which passed, the Catastrophic Health Care Act, which limits reimbursements for prescription drugs products in some cases to what is called the direct price which a manufacturer charges an independent pharmacy.

This OSHA regulation will significantly add to the ingredient costs of the product, and the additional ingredient cost will primarily be found at the drug wholesale level. But the pharmacy will not be reimbursed for the additional cost. The pharmacist will not, as he orders his products from his wholesaler, who is far more efficient in the distribution of those products be reimbursed for the additional cost if direct prices are used. So, what you have is one act frustrating another.

We would ask as a matter of public policy that the agencies look to these issues and meet with us. We are more than happy to help find a solution to these problems. Thank you.

[The prepared statement of Mr. Olin follows:]

Statement of the

National Wholesale Druggists' Association

Statement of

Larry G. Olin, President
Humiston-Keeling Inc.

Before the

Small Business Committee

U.S. Senate

June 22, 1989

National Wholesale Druggists' Association
105 Oronoco Street • Alexandria Virginia • 703/684-6400
Mailing Address: P.O. Box 238 • Alexandria, VA 22313

Thank you Mr. Chairman, and Members of the Committee, for providing my company an opportunity to discuss the problems the Hazard Communication Standard is presenting to my business in Calumet City, Illinois.

INTRODUCTION

My name is Larry G. Olin. I am President of Humiston-Keeling Inc. which is a privately held drug and health care product wholesale distribution business. We have one distribution center. Out of that one distribution center our 194 employees receive, inventory and distribute prescription and over-the-counter drugs, cosmetics and beauty aids and home health care products to approximately 200 hospitals, 600 independent retail pharmacies and 240 retail chain pharmacies and warehouses throughout Illinois, and parts of Michigan, Indiana and Wisconsin.

Our inventory consists of more than 25,000 different products. 15,000 of those products are prescription drug products. About 3,500 are over-the-counter drug products. The remaining 6,500 products consist of toiletries, sundries, durable medical equipment and home health care products.

18,500 of the products we inventory, i.e., prescription and over-the-counter drugs, are regulated by the federal Food & Drug Administration (FDA). FDA's regulations require significant testing for toxicity, effectiveness and safety of the product. Necessarily, FDA considers the health and safety of the

pharmacists, physicians and other health professionals administering the drugs as well as the safety for the patient receiving the drugs. Their effort, in conjuction with those of manufacturers, results in highly detailed and carefully regulated product labeling. The FDA labeling system is not limited to the paper applied to the bottle -- it includes an elaborate data sheet that is attached to each package of prescription drug product, referred to as a professional package insert.

HAZARD COMMUNICATION STANDARD

The Occupational Safety and Health Administration (OSHA) Hazard Communication Standard was extended to nonmanufacturers such as product wholesaler distributors (see attached NWDA Briefing Paper).

The materials we distribute to retail, nursing home and hospital pharmacies are used in dispensing prescriptions. As with any medical product, precision, care, and safety are paramount. The personnel involved at our customer facilities are highly trained professionals -- people who know chemistry and the properties of the materials they handle.

PURPOSE OF THE HAZARD COMMUNICATION STANDARD

We understand the purpose of the OSHA Hazard Communication Standard is to convey information on the hazards of chemicals to employees who are exposed to those chemicals, and who were not otherwise getting this kind of information. We support this concept and meet the standard for chemicals used in maintaining our own facility.

SPECIAL PROTECTIVE MEASURES TAKEN BY HUMISTON-KEELING INC.

In our distribution center, we have established the following procedures for handling products which have been determined to be hazardous:

1. Management and shift supervisors have been trained in emergency health protocol by health care professionals.

2. All personnel have been instructed that in the case of breakage of any containers to immediately leave the area and contact their supervisor.

3. The return goods department personnel have been instructed not to open any container or package that appears to be broken or a leaker. The package is immediately put into specially marked disposal containers.

4. Supervisors have been supplied with protective garments, masks and gloves to use when cleaning up a spill or breakage.

5. Speciality disposal containers that have been developed for carcinogenics are available.

6. An emergency shower and eye wash basin have been installed, and the supervisors have been trained in proper use.

7. Telephone numbers posted include:

a) Local ambulance service;

b) St. Margaret Hospital, which is approximately three miles away;

c) Poison Control Center at Rush Presbyterian St. Luke's Hospital.

8. Supervisors have been instructed on the fastest route to St. Margaret Hospital's emergency entrance.

9. The Physicians Desk Reference and material safety data sheets are available to all employees.

10. Cancer treatment drugs have been moved into an isolated picking section. The area is posted with signs indicating toxic. We also installed 1/2 inch rubber matting in the aisles of this section. Product from this section is picked and put into plastic bags and sealed before being placed into the order.

11. One-half inch rubber matting has been installed the full length of the aisles in front of the conveyor to prevent breakage.

12. All employees participate in periodic review of procedures to be followed in case of breakage or spills. Training is with verbal and written instruction.

13. One person has been assigned to coordinate all activities involved with OSHA and the right-to-know matters.

HAZARD DETERMINATIONS

The fundamental steps under the standard are taken by the manufacturer of the chemical, who makes the initial hazard determination and prepares proper package labeling and the paperwork to describe the hazards -- the Material Safety Data Sheet or MSDS.

Except for pills and tablets in final solid form, the OSHA standard applies to any medical product which the manufacturer determines should be accompanied by a MSDS.

One determines chemical hazards by testing each product or, if one does not want to go through the expensive and time-consuming process of testing, the hazards of each of the ingredient materials can be described as if the product were made up of 100 percent of each ingredient material.

Most medical products are not straight chemicals -- they are mixtures, solutions and other compounds which may not have been individually subjected to the specific battery of tests prescribed by OSHA. What we are finding, therefore, is:

1) Based on the critieria set forth for determining whether a chemical in a drug product is hazardous, pharmaceutical manufacturers are indicating that most of the products they manufacture, regardless of their concentration will be determined to have hazardous substances (any chemical which is an

irritant and causes a reversible inflammatory effect on living tissue when tested by the methods in 16 CFR 1500.14 is considered to be a hazardous substance).

2) Manufacturers' products are describing all conceivable hazards of all ingredients, so that virtually every product we distribute would be accompanied by a MSDS. The same product made by different manufacturers, i.e., generic drugs, would be accompanied by separate and different MSDSs.

WHOLESALER RESPONSIBILITY

As ~~a wholesale~~ distributor, I am in no position to second guess the manufacturers of these products. If they send me an MSDS, under the OSHA standard I must copy it for each of my customers and send it to them. My business alone carries approximately 10,000 drug products that I believe are subject to the OSHA standard and would require a MSDS, if the standard is applied to FDA-regulated drugs. As I mentioned earlier, we now are getting MSDSs for products that just don't warrant MSDSs, simply because makers of these products create MDSDs to meet an unclear standard. Thus, my estimate of the number of products is probably low.

We serve 1,040 customers from our distribution facility. Virtually all of them must be sent a full set of each of the MSDSs we receive. If the standard is applied to FDA-regulated drugs, my single business is liable to receive approximately 10,000 additional MSDSs. Once received, my employees have

to store them, index them, keep them up to date, and make a total of 10.4 million copies of them and distribute them to our pharmacy customers. We would have to keep records, of course, to assure that this had been done, and we would have to repeat the cycle for every new product or revised MSDS that comes in. I am afraid to estimate what this is going to cost me.

What I look at instead is why I am supposed to be doing this. The basic purpose is to provide hazard information to employees who do not have it. The pharmacies with which we deal, however, are staffed by trained and certified professionals. Every pharmacy has multiple texts immediately available and in daily use which describe, in far more detail than a MSDS, the precise chemistry of each material and the hazards involved. Examples of these texts are the Physicians Desk Reference and Facts and Comparisons.

These are not the generic shotgun summaries of all ingredients that you find on the typical MSDS, but are specific to the product or compound. These texts are indexed, cross-referenced, and organized in a format with which the pharmacy is intimately familiar. These volumes communicate — MSDSs for drugs do not.

The National Wholesale Druggists' Association (NWDA), of which I am a member, estimates the cost of distributing a single item (whether it is a bottle or a piece of paper) to be $1.54 per invoice line.

Using this industry figure, my business alone would have to spend $16,016,000.00 to send out 10.4 million MSDSs (41.6 million copies at 4 pages/MSDS) to our 1,040 pharmacies.

The NWDA membership includes but 290 of the nation's estimated 4,000 drug wholesalers. Even limiting our estimates to NWDA's membership, NWDA estimates each distribution center having to make 4.8 million copies of 12,000 MSDSs which, conservatively assuming an average page length per MSDS of 4, would mean each distribution center distributing 19.2 million pages to pharmacies. The average wholesaler is expected to incur costs in excess of $10 million per distribution center to comply with this requirement.

Our customers, in turn, often are served by more than one drug wholesaler. That means that the flood of paperwork coming to them from us will also come to them from two or three others. Some manufacturers sell directly to pharmacies as well as to wholesalers — another duplication.

All of this cost and effort would be to provide generic, misleading and incomplete information in the form of MSDSs to professionals who already have published volumes of FDA-required, exact and detailed information on their shelves.

Pharmacists have no room for all this paper, no need for general information on a MSDS, and no likelihood of ever reading it. Yet, once they get it, they would have to maintain files of it, not because they would use it but because the law says so.

On December 8, 1988, NWDA testifed before OSHA at the Agency's request. In its testimony, NWDA stated its concern over the liability of distributors put in the awkward position of deciding what MSDSs were necessary to pass on to customers. To illustrate this concern, and for the record, NWDA

submitted copies of MSDSs that have been received by one of its wholesale members. NWDA asked OSHA to review the MSDSs to advise NWDA which MSDSs were required by the standard to be distributed to customers and which were not. It was NWDA's feeling that such a review would be the only way distributors could be sure of compliance with the Hazard Communication Standard. NWDA also presented 12 questions that were of serious concern to drug wholesale distributors which OSHA was asked to answer. They included:

1. Other than in response to a specific employee request, does a distributor of chemical products have to seek out and obtain MSDSs from manufacturers or importers, or need he only keep and pass on those he happens to receive?

2. Does the OSHA Hazard Communication Standard permit a distributor who receives an MSDS from a manufacturer or importer to decide on his own not to pass that MSDS on to customer/employers?

3. If so, given the apparent mandatory language of paragraph (1)(7) of the standard to pass on MSDSs, where in the standard is the distributor's discretion not to pass them on to be found?

4. Upon what grounds could a distributor properly determine that a chemical was not subject to the standard, if the manufacturer of that chemical apparently made the initial

determination that it was covered by providing an MSDS to that distributor? In other words, if the distributor has discretion to decide what is or is not covered, in a practical sense how can he exercise that discretion?

5. Could OSHA please address the regulatory and civil liability of a chemical distributor who chooses not to pass on an MSDS for a product later alleged to be hazardous?

6. Paragraph (a)(6) of the OSHA standard exempts foods, drugs and cosmetics in a retail establishment which are packaged for sale to consumers. Are these products still exempt if their packaging is opened by a pharmacist who uses the contents to formulate prescription medicines?

7. Is a consumer product such as rubbing alcohol exempt under paragraph (a)(6)(vii) when packaged in 5-gallon drums?

8. Does a pharmacist's formulation of prescription medicines with ingredients from over-the-counter packages constitute use of a consumer product "in the same manner as normal consumer use," as that term is found in paragraph (a)(6)(vii) of the standard?

9. Is the standard as currently written sufficiently flexible and performance-oriented to permit use of alternative sources of MSDS-type information, such as the Physicians' Desk Reference books or Facts and Comparisons, in place of MSDSs?

10. If a distributor or pharmacist receives two or more MSDSs from different manufacturers of the same U.S.P. material, that differ from one another in phrasing, is he obligated to maintain files on all of them or just one?

11. Paragraph (a)(4) of the standard says that in work operations where employees only handle chemicals in sealed containers which are not opened under normal circumstances, such as in cargo terminals and wholesale facilities, "the section applies to these operations only as follows," listing three limited requirements. Are all of such an employer's obligations set forth in paragraph (a)(4), i.e., does such an employer have no obligation to pass on MSDSs to commercial customers under paragraph (g)(7)?

12. Is it OSHA's position that provisions on drugs and consumer products, disallowed under the OMB procedure addressed by the Third Circuit, will not be enforced with citations until the conclusion of the rule change proposed on August 8, 1988?

It is now June 22, 1989, and OSHA has not been able to answer any of the questions.

CONCLUSION

You would think that such an absurdity could not happen, but that is where the drug wholesaler and pharmacy find themselves. Although, in response

to our comments, OSHA has initiated a notice of proposed rule making and proposed some modest adjustments which would help, we more strongly favor the approach recommended by the Office of Management and Budget -- deletion of FDA-regulated drugs from coverage under the OSHA standard because existing alternative sources of FDA-required information are more accurate, more appropriate, and more effective communications to the intended audience. This alternative would be consistant with the legislative goals of the Paperwork Reduction Act, the Regulatory Flexibility Act, and common sense.

Thank you for this opportunity to voice our concerns.

* * *

NATIONAL WHOLESALE DRUGGISTS' ASSOCIATION (NWDA)
BRIEFING PAPER
OSHA HAZARD COMMUNICATION STANDARD

OSHA's Hazard Communication Standard in 29 CFR 1910.1200 applied initially to employers only in the manufacturing SIC Code designations 20-39. This did not affect wholesalers or retailers except to the extent they might have distributed chemicals to manufacturers.

Pursuant to an order of the Third Circuit Court of Appeals, OSHA expanded the rulemaking to nonmanufacturers. Generally speaking, the final rule merely extended to nonmanufacturers the standard which had been implemented for manufacturers. This final rule was published on August 24, 1987.

Basic elements of the standard are a chemical hazard determination by a manufacturer or importer, who then prepares package labeling and documentation in the form of a material safety data sheet (MSDS). Downstream users and distributors of chemicals have the obligation to obtain and/or pass on to their commercial customers any MSDSs that are received.

The so-called chemical hazards distributed to hospital, nursing home and retail pharmacies by drug wholesalers are prescription and over-the-counter medicines and typical consumer products found in drug stores. Many makers of these products have prepared and sent out MSDSs, whether they needed to or not, and whether the product bears any hazard or not. Examples of materials for which MSDSs have been received by wholesalers are Crest children's toothpaste and Pepto-Bismol. The added paperwork burden on manufacturers may not be substantial. They simply send out copies of papers they already prepared for use in their own manufacturing plants where employees are exposed to large quantities of these materials in production tanks and on filling lines -- but distributors are compelled thereafter to duplicate and distribute all that paperwork to the thousands of commerical customers using those products in smaller packaging.

The severe impact of the OSHA standard expansion that concerns drug wholesalers stems from their apparent obligation to maintain and, more importantly, to copy and to distribute multipage MSDSs to all pharmacists served by the drug wholesaler. It appears that approximately 12,000 individual products carried by drug wholesalers may be affected by the OSHA standard. Each would have a separate MSDS. NWDA represents 290 of the nearly 4000 drug wholesalers in the U.S. These 290 member distribution centers average 400 customers each. Simple extrapolation shows that each center would be required to handle approximately 4.8 million MSDSs. Assuming a length of 4 pages each, we project that each center would have to manage a total of 19.2 million pages of new paperwork.

Each pharmacist customer of a wholesaler typically is served by more than one supplier. Thus, each pharmacist would receive multiple copies of the same MSDSs. We strongly question whether it is technologically feasible to communicate hazard information regarding thousands of drug products through numerous volumes of multipage MSDSs kept on shelves in pharmacies and medical work stations. Whether the distribution, indexing, updating, maintenance and use of this form of paperwork record to communicate health and safety information is capable of being done, executed or effected (as the word feasible is defined) is extremely doubtful.

Pharmacists receiving this outpouring of paperwork are not strangers to chemistry but, rather, are trained, certified, and knowledgable individuals. In addition to the extensive education and certification requirements met by such people, they already have immediately at hand established reference texts (such as the Physicians's Desk Reference), which convey detailed chemical and hazard information about medications they handle, in a format with which they are intimately familiar. FDA-required professional package inserts in each container accomplish this hazard communication as well. The deluge of MSDSs apparently required by the OSHA standard, therefore, is not reasonably necessary or appropriate to provide safe or healthful employment, or places of employment, for pharmacists or other medical professionals.

Professional package inserts by regulatory definition are considered part of the FDA labeling requirements, which are acknowledged in the OSHA standard as rendering package labeling unnecessary. The same view should extend to MSDSs.

In developing precautionary labeling (including package inserts which are preprinted in reference texts), the FDA considers the health and safety of the pharmacist as well as of the patient. Specific exposure hazards posed by materials such as oncolytic agents have been addressed by the FDA, not only in labeling but in other required handling procedures. The FDA thus exercises its statutory authority to prescribe and enforce regulations applicable to the same working conditions addressed by OSHA, affecting the safety and health of pharmacists and medical professionals in their workplace.

It should be recalled that the medications involved are intended to be ingested by, applied to, or injected into people. These are far more severe exposures than the slight contact of the pharmacist or the administering professionals, and warnings offered for patients necessarily must be deemed to subsume these more casual exposures.

For all of these reasons, the OSHA Hazard Communication Standard in 29 CFR 1910.1200 should be inapplicable in its entirety to FDA-regulated drugs.

6/22/89

The CHAIRMAN. Thank you. Your suggestions are excellent.
Mr. COOPER.

STATEMENT OF BENJAMIN Y. COOPER, SENIOR VICE PRESIDENT FOR GOVERNMENT AFFAIRS, PRINTING INDUSTRIES OF AMERICA, ARLINGTON, VA

Mr. COOPER. Mr. Chairman, thank you. I am senior vice president for Government Affairs for the Printing Industries of America. While I do not propose to speak for the organization, I am also chairman of the Employment Issues Commission for the Small Business Legislative Council where the Hazard Communication Program has been discussed thoroughly.

We may be in an unusual situation here today because we support the OSHA Hazard Communication Standard and found it to be a very effective health and safety training vehicle for our industry.

And in saying that I will say that I am sympathetic to the other industries here. We are typically single-site, but the printing industry is very chemical-intensive. We are the largest manufacturing industry in the country in terms of numbers of establishments, so it is a complicated rule for us, but I understand the other problems that exist.

We have some problems with the Hazard Communication Standard that I would like to address quickly that I think this Committee could do a great service to the small business community, particularly in our case, in the Hazard Communication Program. That is to inject some standardization into the forms that are submitted. The Material Safety Data Sheet forms have gotten needlessly complex because of the concerns of the chemical industry with liability for the products that they are sending forth.

What has happened is that these forms which were intended, despite what OSHA said, to inform employees about what they are working with because that is the vehicle that you use to train are so complex in some cases they simply do not provide that information.

We asked OSHA during the initial process when this regulation was developed and have subsequently asked for some standardization. This could be accomplished any number of ways. Even if every company does not have to have the same form, you could have a simple series of boxes to check whether the product was toxic, flammable, corrosive or whatever category it fits into and some simple precautions that could be used for corrective action. If the manufacturer wants to provide substantially more information, then that could be done in addition to that standardized form.

I would also like to recommend, as Mr. Streck has mentioned, we have a network of competing regulations here. The Environmental Protection Agency has done a very good job of informing companies about things to do and various regulatory programs, but one of the reasons they have done that is their regulations are far more complex in many cases. I refer specifically to the Community Right-to-Know regulations which requires a very, very similar form, but not the same form that is used by OSHA.

We have asked all along throughout this process that the same form be used and that these two agencies get together and link their programs. If the Material Safety Data Sheet is done properly, the employer, in our case the printer, does not have to do redo the Community Right-to-Know Program to provide the same information about the same product. It could be done in one form.

One of the reasons we like this Material Safety Data Sheet is because it tends to require our members and printers throughout the country who are not our members to pay a little bit of attention to the chemicals they are using, and we would like to see this knowledge linked with the various other laws such as not only Community Right-to-Know, but the Clean Air Act, the Hazardous Waste laws, the Clean Water Act, and a number of other things.

For most of us in manufacturing, all of our environmental problems begin with the chemicals we buy. If we understand those chemicals better, we can solve some of the problems downstream.

If this Committee did anything out of these hearing that would be valuable for us, it would be to simplify these forms in a way that can be used by small business such as ours and to link the agencies together so that they are required to come out with something that takes the chemical all the way through the process both from the employee education standpoint and the use of the product as it goes through.

I would like to say one final thing. We have been very concerned with some of the de minimis requirements and the article's potential under the Hazard Communication Program, and I have asked this Committee to be very cognizant of some of the proposals that have been made to require the Material Safety Data Sheets on certain products.

Among those products, quite frankly, that we are concerned about is the prospect of providing a Material Safety Data Sheet on printed products. That would be nightmarish in its consequences.

Thank you very much.

[The prepared statement of Mr. Cooper follows:]

PRINTING INDUSTRIES OF AMERICA, INC.

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Government Affairs
Department

TESTIMONY OF THE

PRINTING INDUSTRIES OF AMERICA

BEFORE THE

SENATE SMALL BUSINESS COMMITTEE

June 22, 1989

For More Information
Please Contact:
Benjamin Y. Cooper
Printing Industries of
America
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(703) 841-8115

Mr. Chairman and members of the Committee, my name is Benjamin Y. Cooper. I am the Senior Vice President of the Printing Industries of America, a trade association comprised of approximately 13,000 companies involved in all aspects of the printing and graphic arts industry. I am accompanied today by John Runyan, PIA's Director of Political Affairs. PIA also represents the National Association of Printers and Lithographers and other members of the Graphic Arts Legislative Council, a list of which is attached to this statement.

I should also add that PIA is a very active member of the Small Business Legislative Council and, in fact, I serve as Chairman of the SBLC Employment Issues Committee. While I do not speak today on behalf of SBLC, I feel confident that the views expressed in my testimony are shared by many of my colleagues in the organization.

Printing is the largest manufacturing industry in the United States in terms of numbers of establishments. More than 36,000 printing firms employ more than 801,000 employees, a 65% increase since 1972. 80% of these firms employ fewer than 20 people. In the last five years alone, printing employment grew by 20% while all other manufacturing employment grew by only 2%. 1989 annual sales is projected to exceed $73 billion, making printing bigger than the U.S. steel industry, the U.S. computer manufacturing industry, and the U.S. aircraft manufacturing industry. Printing is truly a quiet giant among American manufacturers.

Mr. Chairman, we appreciate the opportunity to share with you a few comments and observations about the OSHA Hazard Communication Standard, particularly with regard to the Material Safety Data Sheet (MSDS) around which the Standard is based. As representatives of a manufacturing industry, we have been involved with the Standard since it began being phased-in in November, 1985.

The Hazard Communication Standard simply formalizes what has long been understood to be the cornerstone of any effective workplace safety program — that workers have a right, indeed an absolute need, to know the hazards of the chemicals with which they work. Without this basic knowledge, any attempt to develop a safe and healthy workplace is doomed to failure. PIA and its affiliated organizations support the Hazard Communication Standard and are committed to helping our members come into full compliance with it. We are here today only to offer a few observations about our experience with the Standard and some suggestions about how we think the Standard could be improved, particularly for the primary constituents of this committee, the small business community.

PIA has made a vigorous effort to explain the Hazard Communication Standard to our members companies and assist them in compliance. In early 1985, we convened a panel of the printing industry's leading health and safety experts to draft a model compliance program for our members companies. The PIA Hazard Communication Manual, which I will be happy to leave with the Committee for your review, takes a printer through all the necessary steps to ensure full compliance with the Standard. In 1988, we developed a generic version of the Manual that was applicable to manufacturers and non-manufacturers and made it available to the Small Business Legislative Council for distribution to their members. Through these combined efforts we have distributed more than 20,000 copies of this compliance program.

Our perspective on the Standard reflects the fact that we are a chemical intensive manufacturing industry. Other industries with far different levels of chemical use will obviously have a very different opinion of the effectiveness of the Hazard Communication Standard.

The Hazard Communication Standard focuses on the Material Safety Data Sheet as the primary means of transmitting chemical hazard information from chemical manufacturers to end users. While the MSDS is not a perfect vehicle for disseminating information, it can serve a very useful function by placing detailed information into the hands of people who really need to have it. This benefit is, ironically, its chief curse as well. Quite often, the MSDS is so loaded with information that it becomes ineffective in communicating essential information. The MSDS has become a terrific tool for industrial hygienists and environmental specialists, but a terrible way to communicate essential information to small business owners that employ neither of these specialists. In too many instances, the MSDS has become a cumbersome, unreadable document that is more of a paperwork burden than a guidepost to safe work practices. It is important to keep in mind that the MSDS is supposed to be the primary reference that workers will use in the event of an exposure or an accident. If it is too technical and complicated it is unlikely to be of any value in the event of an emergency.

One of the major reasons we are now seeing excessively detailed MSDSs is that chemical manufacturers are concerned about their liability exposure should they leave an important piece of information off the sheet. Other companies believe that more complete information will give them a marketing advantage over their competition.

One possible solution to the ever-increasing length of the data sheets would be to consider the development of a standardized MSDS. OSHA could prescribe not only the exact format of the sheet but also outline precisely what kind of information could and could not be contained within it. For example, simple boxes could be checked to indicate types of hazards presented by the chemical. Many current MSDSs tell you what the flash point of a chemical is but do not indicate whether or not OSHA considers the chemical "flammable" (i.e. a chemical with a flashpoint below 100° Fahrenheit).

Another advantage to a standardized MSDS is that recognition could be given to the fact that the MSDS serves as the basis for compliance for far more than simply OSHA regulations. Businesses must also use the MSDS to determine if they must comply with EPA's Community Right-to-Know Law, the Hazardous Waste Disposal law, and the Clean Air Act. Since chemical manufacturers are aware when they produce an MSDS whether or not the chemical is covered under any of the other laws, they could very simply indicate with a check mark that a particular chemical will trigger Community Right-to-Know reporting requirements or other compliance responsibilities. The failure to have this information readily available on one standard, easy-to-read form means that a small company must consult four separate and lengthy editions of the Code of Federal Regulations in order to meet the compliance requirements in the areas I mentioned.

This is an issue that may not be of interest to large manufacturers, but small companies, without full time industrial hygienists or environmental specialists, could benefit greatly from such a requirement. If our goal is to increase compliance with these various laws, then requiring OSHA and EPA to

actually work together in this area would be in the public interest. Unfortunately, the agencies are not going to get together on their own and make life easier for American small business.

Since I have discussed safety and environmental compliance problems broader than those covered under the Hazard Communication Standard, let me mention an additional area that affects small business compliance in these areas. While the Hazard Communication Standard preempts state worker right-to-know laws, there is no similar preemption in the Community Right-to-Know Law enforced by EPA. As a consequence, dozens of states have jumped into the act of regulating in this area and have created an overlapping web of often contradictory laws that creates real headaches for small businesses trying to do business in multiple jurisdictions. As long as the Senate Small Business Committee is looking into ways to improve small businesses' ability to comply with health and environmental laws, this is an area that merits attention.

Mr. Chairman, I appreciate the opportunity to present these few brief comments to you. I will be happy to respond to any questions you may have.

MEMBERS OF THE GRAPHIC ARTS LEGISLATIVE COUNCIL

National Association of Printers and Lithographers

National Association of Quick Printers

International Prepress Association

Typographers International Association

Graphic Arts Technical Foundation

Book Manufacturers Institute

National Association of Diemakers and Diecutters

Printing Industries of America, Inc.

The CHAIRMAN. One thing that irritates me when I am on airplanes, where I am always reading newspapers, is that I have to wash my hands before I feel like eating.

Mr. COOPER. You must not be using soy-based inks.

The CHAIRMAN. If I had my way, we would all be using soy-based inks.

Mr. George.

STATEMENT OF STEPHEN GEORGE, HAUSSNER'S RESTAURANT, REPRESENTING THE NATIONAL RESTAURANT ASSOCIATION, WASHINGTON, DC

Mr. GEORGE. Good morning. My name is Steve George. I serve as a director of the National Restaurant Association and general manager of Haussner's Restaurant.

I would like to alert you to some of the effects of the OSHA Hazard Communication Standard for our industry and my own business.

Haussner's is an 850-seat restaurant, bakery and banquet facility located in Baltimore, MD. Our menu details over 100 entrees including German specialties, seafood, daily specials, and freshly baked breads and deserts. We inventory over 900 different items. We employ over 200 persons, and I have a strong personal and professional interest in protecting them from illness or injury.

The food service industry in general is classified as low hazard and is exempt from most OSHA recordkeeping requirements. Local health departments control by regulation most of the chemicals we use in the food service industry.

I am a restauranteur, not a chemist, and therefore I rely on my numerous purveyors to provide within local health department regulations reasonably safe materials with product labels for clear instructions detailing safe use and handling.

We have a Material Safety Data Sheet accessible for our employees but frankly, I cannot understand most information on these data sheets, and I am not sure exactly how to incorporate them into our training program. A few examples may help to illustrate how confusing it is to try to comply with OSHA's standards.

The MSDS says that Ajax scouring powder—that was one of the examples I did include—is chemically similar to household products. I might conclude that it is OSHA-exempt. It lists eye irritation as the only hazard and says no special protection is needed. The same sheet also describes symptoms of ingestion and says inhalation may aggravate a lung condition. At the end of 3 pages of fine print I am still left with a final question: Is it hazardous?

Some data sheets cry wolf. Our MSDS for liquid hand soap used by all of our valued customers and employees tells me that for safe usage I should provide protective splash goggles and an eyewash station.

Under health hazard data it tells me that if hand soap comes in contact with skin I should rinse with large amounts of water.

Finally, it cautions of its incompatibility with toilet bowl cleaners and bleaches. This leaves my employees who clean the rest rooms no safe hand sink in my building to wash after doing their job.

My final example is equally as ludicrous, but it shows how far the standard has strayed. Thousands of operators across the country have received an MSDS which identifies Diet Pepsi as a hazardous material because it contains saccharin.

How can we expect employees to place any credence in warnings about legitimate hazards when we exaggerate the issue with warnings about saccharin in a commonplace soft drink and instructions to wear protective eye goggles when washing their hands?

We want to provide a safe workplace, we want to comply with OSHA's standard, and we have tried to base our program on our association's best technical advice. To comply with this standard Haussner's will spend more than $5,000 to establish our Hazard Communication Program.

As products and purveyors change and employees turn over, we will spend an estimated $1,000 in ongoing costs each subsequent year.

We still have questions about applying this industrial standard to the restaurant business. Will an inspector recognize our good faith efforts at compliance or will we be cited for minor technical errors beyond a layman's reasonable understanding?

If we use an exempted consumer product like bleach, how can we determine if we have exceeded normal use? And what is our liability if we do not pass on warnings about an OSHA-exempted consumer product?

We understand that foods and beverages may be exempted from coverage in the future, but for now are we expected to obtain an MSDS on hot peppers? Must I provide training on Diet Cola to be in compliance?

I have one last question, Mr. Chairman. Why cannot low hazard industries such as the restaurant business be granted outright exemption from these OSHA paper filing requirements? Why can we not go with a more obvious, simpler approach, and that is to follow all label directions which appear on most of our MSDSs?

[The prepared statement of Mr. George follows:]

Leading the Foodservice Hospitality Industry
1200 SEVENTEENTH STREET N.W. WASHINGTON, DC 20036-3097 202 331-5900 FAX 202 331-2429

NATIONAL RESTAURANT ASSOCIATION

STATEMENT OF

STEPHEN GEORGE
GENERAL MANAGER OF HAUSSNER'S RESTAURANT, INC.

BEFORE THE
SENATE SMALL BUSINESS COMMITTEE
ON THE
OSHA HAZARD COMMUNICATION STANDARD

JUNE 22, 1989

Good morning. My name is Stephen George. I serve as a Director of the National Restaurant Association and General Manager of Haussner's Restaurant, Inc. I would like to alert you to the effects of the OSHA Hazard Communication Standard for our industry, and my own business.

Haussner's is an 850 seat restaurant, bakery and banquet facility located in Baltimore, Maryland. Our menu details over 100 entrees including German specialties, seafood, daily specials and freshly baked breads and desserts. We inventory over 90 different items. We employ over 200 persons and I have a strong personal and professional interest in protecting them from illness or injury.

The foodservice industry in general is classified as "low hazard" and is exempt from most OSHA recordkeeping requirements. Local health departments control, by regulation, most of the chemicals we use in the foodservice industry. I am a restaurateur, not a chemist; therefore, I rely on my numerous purveyors to provide, within local health department regulations, reasonably safe materials with product labels for clear instructions detailing safe use and handling.

We have Material Safety Data Sheets (MSDS) accessible for our employees, but frankly, I can't understand most information on these data sheets, and I am not sure exactly how to incorporate them into our training program. A few examples may help to illustrate how confusing it is to try to comply with OSHA's standard. The MSDS says that Ajax scouring powder (See Exhibit 1) is chemically similar to household products. I might conclude that it is OSHA-exempt. It lists eye irritation as the only hazard, and says no special protection is

needed. The same sheet also describes symptoms of ingestion, and says inhalation may aggravate a lung condition. At the end of three pages of fine print, I am still left with the final question, "Is scouring powder hazardous?"

Some data sheets "cry wolf." Our MSDS for liquid hand soap (See Exhibit 2) used by all of our valued customers and employees tells me that for safe usage, I should provide protective splash goggles and an eye wash station. Under "Health Hazard Data" it tells me that if hand soap comes in contact with skin, I should rinse with large amounts of water. Finally, it cautions of its incompatibility with toilet bowl cleaners and bleaches. This leaves my employees who clean restrooms no safe hand sink in my building to wash their hands after this task.

My final example is equally ludicrous, but it shows how far this standard has strayed. Thousands of operators across the country have received this (See Exhibit 3) MSDS which identifies DIET PEPSI as a hazardous material, because it contains saccharine. How can we expect employees to place any credence in warnings about legitimate hazards when we exaggerate the issue with warnings about saccharine in a commonplace soft drink, and instructions to wear protective splash goggles when washing their hands?

We want to provide a safe workplace. We want to comply with OSHA's standard, and we have tried to base our program on our Association's best technical advice. To comply with this standard, we will spend more than $5,000 to establish our hazard communication program. As products and purveyors change and employees turn over, we will spend an estimate $1,000 in on-going costs each subsequent year.

We still have questions about applying such industrial standards to the restaurant business: Will an inspector recognize our good-faith efforts at compliance, or will we be cited for minor technical errors beyond a layman's reasonable understanding?

If we use an exempted consumer product, like bleach, how can we determine if we have exceeded "normal use?" What is our liability if we don't pass on warnings about an OSHA exempted consumer product?

We understand that foods and beverages may be exempted from coverage in the future. But for now, are we expected to obtain an MSDS on hot peppers? Must I provide training on diet cola to be in compliance?

I have one last question, Mr. Chairman. Why can't "low-hazard" industries such as the restaurant business be granted outright exemption from these OSHA paper-filing requirements? Why can't we go with a more obvious, simpler approach? The approach I have in mind is the one I have successfully used for years, and which appears on most of my MSDSs--"FOLLOW ALL LABEL DIRECTIONS." (See Exhibit 4)

Thank you, Mr. Chairman, for hearing the views of the National Restaurant Association on this perflexing issue.

CPL Industries
101 North Summit Street
Tenafly, N.J. 07670
A Division of Colgate-Palmolive Company

24-Hour Emergency Telephone Number: Pittsburgh Poison Center
Call Collect: (412)-681-6669
Telephone Number For Information: 201-878-7533

PRODUCT SAFETY DATA SHEET

Date Issued: January, 1987

SECTION I PRODUCT INFORMATION

Trade Name: CPL Institutional Products AJAX Oxygen Bleach Cleanser

CPL Stock Code No.: 04275, 04276

Product is: Mixture X CAS No.: Not Applicable
Chemical Substance ____

Chemical Name: Not Applicable.

General Information: A formulated scouring cleanser for institutional and industrial use. Packaged in 14 oz. (04275) and 21 oz. cans (04276). Similar in composition, function and effects to household scouring cleansers. Product does not contain phosphorus or chlorine.

SECTION II HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

CAS #	Material	%	OSHA 29 CFR 1910.1000 Z-3 TLV (Units)
14808-60-7	Silica (SiO_2 quartz)	Approx. 90	0.10 mg/m^3

SECTION III PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance & Odor	Fine, white, heavy powder. Faint "soapy" odor.
Specific Gravity (H_2O=1) @80°F	1.2 g/cc
% Volatile by Volume	Approx. 1%
Solubility In Water	Moderate. Only 4% of composition is soluble.
pH	1% in H_2O = 10.7

CPL Stock Code No.: 04275, 04276

SECTION IV FIRE & EXPLOSION HAZARD DATA

Flash Point: Not Applicable.

Extinguishing Media: Water, carbon dioxide fog.

Special Fire Fighting Procedures: None.

Unusual Fire & Explosion Hazard: None.

V REACTIVITY DATA

Stability: Unstable_____ Stable_X_

Conditions and Materials To Avoid: None known.

Hazardous Decomposition Products: None known.

Hazardous Polymerization: May Occur_____ Will Not Occur_X_

SECTION VI HEALTH HAZARD DATA

Route(s) of Entry: Eye/Skin: Yes Ingestion: Yes Inhalation: Yes

Health Hazards: Eye: Possible eye irritant
Ingestion: LD_{50} (rats) greater than 20 g/kg.
Inhalation: None under normal use. Prolonged inhalation by unorthodox use (non-wetted) or abuse (sniffing) could produce lung disease.

Carcinogenicity: Contains no ingredients defined as carcinogens at 29 CFR 1910.1200 (App. A & B).

Signs and Symptoms of Exposure:
Eye: Transient eye irritation.
Ingestion: Gastrointestinal irritation, vomiting expected upon ingestion.
Inhalation: Coughing, sneezing, breathing difficulty, possibly leading to reduce breathing capacity over a period of time. Extensive inhalation by unorthodox use (non-wetted) or prolonged abuse (sniffing) could produce lung disease.

Medical Conditions Generally Aggravated by Exposure: Asthma, bronchitis, other lung conditions can be aggravated by inhalation of fine particulates.

Emergency & First Aid Procedures: Eye/Skin: Immediately rinse eye thoroughly with water. Ingestion: Give milk or water. Inhalation: Remove from exposure, provide fresh air.

```
*****************************************************************
*  REGIONAL POISON CONTROL CENTERS HAVE BEEN PROVIDED SPECIFIC  *
*  INFORMATION FOR USE IN CASES OF ACCIDENTAL INGESTION OF THIS *
*  PRODUCT. THE TELEPHONE NUMBER OF YOUR NEAREST POISON CONTROL *
*  CENTER CAN BE FOUND IN THE FRONT SECTION OF YOUR LOCAL       *
*  TELEPHONE DIRECTORY.                                         *
*****************************************************************
```

SECTION VII PRECAUTIONS FOR SAFE HANDLING AND USE

Steps To Be Taken If Material Is Released Or Spilled: Vacuum or sweep up or flush to drain with water. Product is biodegradable.

Waste Disposal Method: Conventional solid waste. Not a hazardous waste material. Discard in regular trash collection.

SECTION VIII EMPLOYEE PROTECTION INFORMATION

Respiratory: Not required under conditions of normal use (i.e. on wetted surfaces).

Protective Clothing: None.

Other Protective Equipment: No special protection is required. When product is used as intended, i.e., as a scouring cleanser.

SECTION IX SPECIAL PRECAUTIONS

Precautionary Labeling: Caution: Contains oxygen bleach. Do not mix with Ammonia. Not recommended for use on silver. Use care when cleaning plastic surfaces to avoid scratching.

Other Handling & Storage Conditions: Store at 40° to 125°F in bulk. Keep containers sealed to avoid absorption of moisture from the air and possible loss of bleaching function.

MATERIAL SAFETY DATA SHEET

MANUFACTURER'S NAME: Cello Corp.

ADDRESS: 1364 Old Post Road
Havre de Grace, MD 21078

EMERGENCY TELEPHONE NO. (301) 879-4748

INFORMATION TELEPHONE NO. (301) 939-1234

DATE OF PREPARATION: October 18, 1988

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: 166 [redacted] PRODUCT NUMBER: 78

PRODUCT CLASS: Closing Compound

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	OCCUPATIONAL EXPOSURE LIMITS TLV	PEL	CAS NUMBER

This product contains no hazardous materials per OSHA 29CFR 1910:1200

SECTION III - PHYSICAL DATA

BOILING POINT: 200°F
SPECIFIC GRAVITY: 1.012
% VOLATILE VOLUME: 85.0%
VAPOR DENSITY: (x)HEAVIER ( )LIGHTER THAN AIR
VAPOR PRESSURE (mmHg): 27mm
EVAPORATION RATE: ( )FASTER (x)SLOWER THAN WATER
pH (CONC): 10.3-10.6
APPEARANCE & ODOR: Clear amber liquid with sassafras odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method Used): none Setaflash
FLAMMABLE LIMITS: LEL N/A UEL N/A

EXTINGUISHING MEDIA: N/A
(x)FOAM ( )*ALCOHOL*FOAM (x)CO_2 ( )DRY CHEMICAL (x)WATER FOG ( )OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: Area will become slippery if material is released.

SPECIAL FIREFIGHTING PROCEDURES: If involved in fire, cool containers with water to avoid bursting from expansion and possible toxic fumes from plastic containers on ignition.

SECTION V - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE: Product is an eye irritant. Drying of skin can occur by prolonged contact.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE: Existing dermatological conditi be aggravated by long time exposure.

PRIMARY ROUTE(S) OF ENTRY: (x) ORAL ( ) INHALATION ( ) INGESTION

EMERGENCY AND FIRST AID PROCEDURES:

EYE CONTACT: Flush eyes with large amounts of water for 15 minutes holding eyel apart. Contact a physician if irritation persists.

[redacted] Wash contaminated clothi before reuse. If irritation develops, contact a physician.

INHALATION: N/A

INGESTION: Drink large amounts of water. Do not induce vomiting. Do not give to an unconscious person.

CARCINOGENICITY: IARC MONOGRAPHS not listed NTP not listed OSHA not

TERATOGENICITY: not listed

MUTAGENICITY: not listed

SECTION VI - REACTIVITY DATA

STABILITY: ( ) UNSTABLE (x) STABLE

CONDITIONS TO AVOID: Contact with acids and oxidants.

HAZARDOUS POLYMERIZATION: ( ) MAY OCCUR (x) WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS: carbon monoxide and dioxide.

2

[redacted]

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Area will become slippery. Post DANGER signs. Absorb material onto porous material such as sand, diatomaceous earth or commercial absorbents. Shovel up into drums.

WASTE DISPOSAL METHOD: Deposit or incinerate in accordance with local, state and federal regulations.

SECTION VIII - SAFE HANDLING AND USE INFORMATION

RESPIRATORY PROTECTION: Not necessary

VENTILATION: Local exhaust recommended.

PROTECTIVE GLOVES: Not necessary

[redacted]

OTHER PROTECTIVE EQUIPMENT: [redacted] if available.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Avoid storing near acids or oxidizing materials.

OTHER PRECAUTIONS: None

HAZARD CLASS: N/A UN/NA # N/A

DOT LABEL: N/A

SECTION X - HAZARD CODES

HMIS

Health: 0
Flammability: 0
Reactivity: 0
Corrosivity: 0
Personal Protection: See Sec. VIII

Key: 0 = Insignificant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme

REV _____ REVISED E PREPARED BY [illegible]

SUPERSEDES MSDS DATED 6/23/87 TITLE Senior Chemist R/D

The information herein is given in good faith and believed to be reliable, but is expressed or implied, is made.

3.

PEPSICO INC.
100 Stevens Avenue
Valhalla, New York 10595
(914) 683-0500

MATERIAL SAFETY DATA SHEET PC-4406

EMERGENCY TELEPHONE NUMBER: (800)531-5321 except NY: (800)255-5559 | DATE OF ISSUE: 9/23/87 | ☒ New ☐ Revised

SECTION I - Product Information

COMMON NAME (as used on label): Diet Pepsi F/S (35009*02*29*01), Diet Pepsi Free F/S (07037*05*16*01), Diet Lemon/Lime Slice F/S (53740*01*26*01)

CHEMICAL NAME: Mixtures of food ingredients including saccharin

FORMULA: Specific formulation is being withheld as a trade secret pursuant to the provisions of 29 CFR 1910.1200 (i).

SECTION II - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended
Sodium saccharin	--	10 mg/m^3	--

SECTION III - Physical/Chemical Characteristics

BOILING POINT	N/A	SPECIFIC GRAVITY (H$_2$O = 1)	N/A
VAPOR PRESSURE (mm Hg)	Non-volatile	MELTING POINT	N/A
VAPOR DENSITY (AIR = 1)	Non-volatile	EVAPORATION RATE (Butyl Acetate = 1)	Non-volatile

SOLUBILITY IN WATER: Complete

APPEARANCE AND ODOR: Brown or tan liquids

SECTION IV - Fire and Explosion Hazard Data

FLASH POINT (Method Used): Not flammable	FLAMMABLE LIMITS	LEL: N/A	UEL: N/A

Extinguishing Media: water, CO_2, dry chemical or foam

SPECIAL FIRE FIGHTING PROCEDURES: None

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

The information in this MSDS was obtained from current and reliable sources. Since the conditions for handling, storage and disposal of this material may be beyond our control, it is the user's responsibility both to determine safe conditions for handling, storage and disposal of this material and to assume liability for loss, injury, damage, or expense due to the material's improper handling, storage and disposal.

Reactivity Data

		CONDITIONS TO BE AVOIDED
UNSTABLE		
STABLE	X	

STABILITY (Materials to Avoid)

[illegible]

HAZARDOUS DECOMPOSITION OR BY PRODUCTS

Unknown

		CONDITIONS TO BE AVOIDED
HAZARDOUS POLYMERIZATION — MAY OCCUR		
HAZARDOUS POLYMERIZATION — WILL NOT OCCUR	X	

SECTION VI - Health Hazard Data

ROUTE(S) OF ENTRY	INHALATION?	SKIN?	INGESTION?
	Unknown	Unknown	Unknown

HEALTH HAZARDS (Acute and Chronic) Saccharin is listed in the National Toxicology Program's Annual Report on Carcinogens. When fed at high dose levels, it has caused bladder cancer in second generation male rats. However, the available epidemiological data provide no clear evidence that saccharin causes bladder cancer in humans. The risk to humans is minimal at normal, low exposure. Occupational exposure has caused no known problems. There is a potential for foreign body irritation to the eyes, skin and respiratory tract.

CARCINOGENICITY	NTP?	IARC MONOGRAPHS?	OSHA REGULATED?
	Yes	No	Yes

SIGNS AND SYMPTOMS OF EXPOSURE

None known

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

None known

EMERGENCY AND FIRST AID PROCEDURES

Wash from skin and eye with large amounts of water. Seek medical attention if irritation persists.

SECTION VII - Precautions for Safe Handling and Use

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Contain spill and clean area with water.

WASTE DISPOSAL METHOD

Dispose of in accordance with all federal, state and local regulations

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

No special precautions

OTHER PRECAUTIONS

None

SECTION VIII - Control Measures

RESPIRATORY PROTECTION (Specify type)

No special requirement

VENTILATION				
LOCAL EXHAUST	Not required	SPECIAL	None
MECHANICAL (General)	Not required	OTHER	None

PROTECTIVE GLOVES	EYE PROTECTION
Not required	Not required

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

No special requirement

WORK/HYGIENIC PRACTICES

No special requirement

JUN-21-88 WED 7:42 PETE

DUCARE-3:00-5:00 TST-MON-FRI 1-800-543-4906
24 HR MESSAGE CENTER: 1-800-438-2647

HAUSSNERS
3244 EASTERN AVE.
BALTIMORE, MARYLAND 21224

ATTN: FRANCIS GEORGE

DUBOIS CHEMICALS, INC
3630 E. KEMPER ROAD
SHARONVILLE, OHIO 45241
PREPARED BY: M. ANTOSIAK
ON 12/30/88

EMERGENCY PHONE NO. 513-554-4200
REFERENCE SEQ # 15090

ABBREVIATIONS: C-CEILING, MP-MAXIMUM PEAK, N/A-NOT APPLICABLE, N/K-NOT KNOWN, P-POTENTIAL, PEL-PERMISSIBLE EXPOSURE LIMIT, PM-PENSKY MARTENS, S-SKIN, ST-SHORT TERM, TLV-THRESHOLD LIMIT VALUE, TWA-TIME WEIGHTED AVERAGE

SECTION-1 IDENTITY
COMMON NAME USED ON LABEL: FULLY SEVEN PLUS
CODE 02237
CHEMICAL FAMILY: [redacted]

SECTION-2 HAZARDOUS CREDIENTS (ANY ITEMS LISTED ARE HAZARDOUS BY TITLE SPECIFIED)
PRINCIPAL HAZARDOUS COMPONENT(S) CHEMICAL & COMMON NAME: NONE
% | EXPOSURE LIMITS (TWA 8 HOUR UNLESS OTHERWISE SPECIFIED) | UNITS

SECTION-3 PHYSICAL & CHEMICAL CHARACTERISTICS (FIRE & EXPLOSION DATA)
BOILING POINT 215 °F
PRESSURE 1.014 TORR
SPECIFIC GRAVITY N/A
STANDARD VOLTAGE 17.5 mmHg @ 20 °C
VOLTAGE 75 %
SOLUBILITY IN WATER 100 %
REACTIVITY IN WATER NONE
HEAT EVOLUTION NONE
APPEARANCE & ODOR CLEAR LIQUID, MILD ODOR.
FLASH POINT NONE °F
FLAME EXTENSION N/A in
FLAMMABLE LIMITS IN AIR BY VOLUME LOWER NONE UPPER NONE
AUTO IGNITION TEMPERATURE N/A °F
EXTINGUISHER MEDIA DOES NOT BURN. CO2, FOAM, DRY CHEMICALS
FIREFIGHTING SPECIAL PROCEDURES NONE
UNUSUAL FIRE AND EXPLOSION HAZARDS NONE

SECTION-4 PHYSICAL HAZARDS
STABILITY STABLE
POLYMERIZATION NONE
INCOMPATIBLE WITH STRONG OXIDIZERS
DECOMPOSITION PRODUCTS CO WITH INCOMPLETE COMBUSTION.

SECTION-5 HEALTH HAZARDS
PRIMARY ROUTES OF ENTRY: INHALATION NO SKIN NO INGESTION NO
SIGNS AND SYMPTOMS OF OVEREXPOSURE
1. ACUTE DEFATS SKIN, MAY IRRITATE EYES.
2. CHRONIC SAME AS ACUTE
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE SENSITIVE SKIN.
LISTED CARCINOGEN NONE NTP NO IARC NO OSHA NO
EMERGENCY AND FIRST AID PROCEDURES
1. INHALATION N/A IN NORMAL OPERATION.
2. EYES FLUSH THOROUGHLY WITH FRESH WATER GET MEDICAL ATTENTION IF IRRITATION CONTINUES.
3. SKIN FLUSH WITH FRESH WATER REMOVE CONTAMINATAED CLOTHES AND SHOES.
4. INGESTION GIVE MILK, WATER OR EGG WHITES, INDUCE VOMITING.

SECTION-6 SPECIAL PROTECTION INFORMATION
RESPIRATORY PROTECTION NONE
VENTILATION LOCAL NO
VENTILATION MECHANICAL PRODUCING NORMAL AIR DILUTION SPECIAL NONE
PROTECTIVE GLOVES NONE
EYE PROTECTION NONE
OTHER PROTECTIVE CLOTHING/EQUIPMENT NONE

SECTION-7 SPECIAL PRECAUTIONS AND RELIEFS
HANDLING AND STORAGE PRECAUTIONS DO NOT PRESSURE CONTAINER TO EMPTY KEEP CONTAINER CLOSED IF FROZEN THAW AND MIX TO MAKE USABLE.
[redacted]
IF MATERIAL IS RELEASED/SPILLED FLUSH SMALL AMOUNTS TO DRAIN COLLECT AND RETURN LARGE AMOUNTS TO CONTAINER

The CHAIRMAN. Thank you for a very common sense statement. Mr. Flowers.

STATEMENT OF DON FLOWERS, DON FLOWERS FLORIST, INC., RANDALLSTOWN, MD

Mr. FLOWERS. My name is Don Flowers. I am a florist from just outside of Baltimore, MD, and I appreciate the opportunity to appear before the Committee this morning to discuss some of the problems that small businesses such as mine have been having in trying to comply with the latest trial sent to us from Washington, the Hazard Communication Standard, issued by OSHA.

I offer this statement on behalf of Florists' Transworld Delivery, better known as FTD, and the Society of American Florists. I will be brief, but ask that my entire written statement be included in the record.

The CHAIRMAN. It will be Mr. Flowers.

Mr. FLOWERS. I am past president and currently a member of the President's Council of Government and Industry Affairs of FTD. FTD is a cooperative wire service with over 22,000 small business members in the United States.

FTD functions as a clearinghouse for inner-city flower orders, but each of our members functions as a distinct small business entity. FTD is also the largest member of the floral industry's trade association, the Society of American Florists.

SAF is a trade association representing the entire industry, wholesalers, growers, and retailers, in addition to an additional 120 industry trade associations. I employ about 25 people in my retail flower shops and another 15 in my greenhouses and growing operation.

Like many businesses in my industry, many of my employees are family and others have been with me for so many years that they may as well be. The last thing I want to do is put any of them, or myself, or my family in jeopardy of harmful chemical exposure.

I have made a sincere effort to comply with the standard as I understand it. Everyone agrees that employees need to be trained to avoid chemical hazards at the workplace. But the floral industry disagrees with the standard promulgated by OSHA last year.

We disagree that it is the best way to provide workers with useful information about chemical hazards at the worksite. In theory, OSHA's standard sounds good. Employers must develop an inventory of the hazardous chemicals being used, assure that containers are properly labeled, make Material Safety Data Sheets available and train workers on hazards and safe use of the chemicals and about the requirements of the OSHA standard itself.

But OSHA's current standard is not working because it requires a technical sophistication not enjoyed by many small business owners. It is ambiguous and subjects businesses to paperwork and worry all out of proportion to the benefits gained.

Furthermore, even though the standard has been in effect for more than 1 year, many businesses are not even aware of the requirements. It is inconceivable that OSHA never planned to train employers about this standard, the most comprehensive and far-reaching ever issued by OSHA.

In fact, OSHA has consistently denied any responsibility for telling employers that the standard exists. The standard revolves itself

around something called Material Safety Data Sheets, [MSDS]. Information sheets which detail every hazard that is known about a chemical.

Manufacturers, because of obvious liability problems, are developing MSDSs for such things as wood, glass, soft drinks, and other commonly-used substances. Because of confusion and a sincere desire to comply, employers are training employees about every chemical and physical property listed for every single product used.

This is so much information overload for many employees, they simply begin to tune us out and discount the warnings, even the serious ones.

Under the standard, products containing hazardous materials are lumped together as though the hazardous exposure would always be at its maximum. Products such as our industry uses are used intermittently and are not as a constant part of the workday.

For instance, it is reasonable for a person spray painting automobiles 40 hours a week to understand the chemical properties of spray paints, such as flash points, and so forth. It is also reasonable for an employee manufacturing cans of spray paint to understand the chemical and physical properties of the mixtures which are contained on an MSDS.

But it is far less reasonable to expect a floral designer who is adding a touch of spray color to a wedding bouquet to be trained about the same hazards. He should not have to be told about the specific gravity, viscosity, flash point or any of the other technical and virtually meaningless data contained on an MSDS.

He could be appropriately protected by reading a label that directs him to wear a respirator and to seek help if he begins to feel dizzy.

There needs to be a workable distinction between the constant exposure to significant dangers and occasional uses of products containing hazardous materials.

I have in the report, and I see my time is up, some suggestions that our industry has in how we believe this act could be improved to help our members and the florist industry. I will not read them because they are in the report.

I appreciate the opportunity to be here.

[The prepared statement of Mr. Flowers follows:]

FLORISTS' TRANSWORLD DELIVERY ASSOCIATION

and

SOCIETY OF AMERICAN FLORISTS

Joint Testimony Before

THE SENATE COMMITTEE ON SMALL BUSINESS

hearing on

THE HAZARD COMMUNICATION STANDARD

June 22, 1989

WITNESS

DON FLOWERS
DON FLOWERS FLORIST, INC.
RANDALLSTOWN, MD

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216 7th Street, SE
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My name is Don Flowers, and I am a florist from just outside of Baltimore, Maryland. I appreciate the opportunity to appear before the Committee this morning to discuss some of the problems that small businesses such as mine have in trying to comply with the latest trial sent to us from Washington--the Hazard Communication Standard issued by the Occupational Safety and Health Administration, (OSHA). I offer this statement on behalf of Florists' Transworld Delivery, better known as FTD, and the Society of American Florists' (SAF).

I am a member of the President's Council of Government and Industry Affairs of FTD. FTD is a cooperative wire service with approximately 22,500 small business members in the United States. FTD functions as a clearing house for flower orders sent long distances but each of our members functions as a distinct small business entity. FTD is also the largest member of the floral industry's trade association, the Society of American Florists (SAF).

SAF is a trade association representing the entire industry; wholesalers, growers and retailers. SAF has about 10,000 direct members and also represents an additional 120 industry trade associations.

I employ about 25 people in my retail floral shop and another fifteen in the greenhouse of my growing operation. Some of these employees are actually family, and others have been with me for so long they might as well be. The last thing I want to do is put any of us in jeopardy of a harmful chemical exposure.

I have made a sincere effort to comply with this standard as I understand it. Everyone agrees that employees need to be trained to avoid chemical hazards at the work site. Employees must understand how to take precautions if they are accidentally exposed. But the floral industry disagrees that the standard promulgated by OSHA last year, is the best way to provide workers with useful information about chemical hazards at a work site.

In theory OSHA's standard sounds good. Employers must develop an inventory of hazardous chemicals being used, assure that containers are properly labeled, make material safety data sheets available, and train workers on the hazards and safe use of the chemicals and about the requirements of the OSHA standard itself.

But the way that OSHA has decided to accomplish these simple tasks is not workable for small businesses. OSHA's current standard requires a technical sophistication not enjoyed by many small business owners. The standard is ambiguous and subjects businesses to paperwork and worry far outweighing the benefits gained.

Furthermore, even though the standard has been in effect for more than a year, many businesses still are not aware of the requirements. It is inconceivable that OSHA never planned to train employers about this standard--the most comprehensive and far reaching ever issued by OSHA. In fact, OSHA has consistently denied any responsibility for telling employers that the standard exists.

REQUIRES TECHNICAL SOPHISTICATION NOT ENJOYED BY MANY SMALL BUSINESS OWNERS

The standard revolves itself around something called a Material Safety Data Sheet (MSDS). Chemical manufacturers must develop these information sheets and include every hazard that is known about the chemical. Manufacturers do not have to test the chemical. But if a scientifically valid study exists which cites a hazard, the manufacturer must consider the product a hazardous substance and develop an MSDS to accompany it.

Manufacturers, because of obvious liability problems, are developing MSDSs for such things as wood, glass, soft drinks and other commonly used substances. Because of confusion and a sincere desire to comply, employers are training employees about every chemical and physical property listed for every single product used. This is so much information overload for many employees, they simply begin to tune us out and discount the warnings, even serious ones.

Under the standard, products containing hazardous materials are lumped together as though the hazardous exposure would always be at its maximum. Products such as our industry uses are used intermittently and not as a constant part of the work day. For instance, it is reasonable for a person spray-painting automobiles forty hours a week to understand the chemical properties of spray paints such as flash points, etc. It is also reasonable for an employee manufacturing cans of spray paint to understand the chemical and physical properties of the mixtures which are contained on an MSDS.

But it is unreasonable to expect a floral designer who is adding a touch of spray color to a wedding bouquet to be trained about the same hazards. He shouldn't have to be told about the specific gravity, viscosity, flash point or any of the other technical and virtually meaningless data contained on that MSDS. He would be adequately protected by reading a label that directs him to wear a respirator and to seek help if he begins to feel dizzy.

THE STANDARD IS AMBIGUOUS

There needs to be a workable distinction between constant exposure to significant dangers and occasional use of products containing hazardous materials. Our industry is particularly concerned because we don't know when consumer use becomes industrial use which is covered under the standard. If we use a product more often or in greater strength than a consumer would use it, we have to train and include it in our hazardous substance inventory. Our industry uses chlorine bleach to clean out buckets for cut flowers and disinfect greenhouse aisles and benches. In some instances, this may be for as short as fifteen minutes at a time and the bleach is diluted. In other instances, we use the bleach in greater strengths and for longer periods of time.

The OSHA inspectors can't agree on what is covered and who must be trained. One of SAF's members in Maryland was told he had to train and warn for his employees use of household bleach only twice a week, while another inspector in another state said the only chemicals she thought needed to be included were the pesticides used. In this instance, a heavier use of bleach was excused, while the lighter use was included under the standard. If OSHA isn't sure what is covered, how are we supposed to be?

We have also been concerned about whether or not we must obtain MSDSs from our suppliers for cut flowers which have been treated with chemicals. We have asked this question of OSHA and have been given conflicting answers. Can you imagine the nightmare scenario if we are required to obtain several paper sheets with every stem of cut flower? Even one would create extreme hardship on the industry.

Many of our flowers are imported. Under the standard, the importer would have to develop the MSDS and the labels for the chemicals which had been applied to the imported flowers. That would certainly be a non-tariff barrier to trade.

SUBJECTS BUSINESSES TO PAPERWORK AND WORRY FAR OUT OF PROPORTION TO THE BENEFITS GAINED

Under an economic analysis required by the Paperwork Reduction Act, OSHA estimated that only 18 hazardous chemicals would be used

on average for garden centers and for an agricultural production center the estimate was a mere 37. We use far many more chemical products than that, especially when you include such things as glue, paint, and preservatives.

It has proven to be a major paperwork burden for us to obtain MSDSs even when we believe that the product should have one. After writing to all of our suppliers last year, as directed, we have yet to receive more than a handful of the MSDSs for the products we use. This means I have to rewrite them, or call them--in many cases repeatedly.

Moreover, there are many MSDSs floating around for the same substances. The standard requires the most recent MSDS and I must retrain every time a new MSDS is developed. But, I am still having trouble obtaining the first one, much less any updates.

Would it surprise you to know that there is a separate MSDS for each different color of spray paint from the same company? Distributors have stopped carrying smaller volume products like paint sprays (used by retail florists), rather than incur the cost of distributing MSDSs. One manufacturer of spray paint estimated that it has to send out about three and one-half million pieces of paper to comply with this standard. Some suppliers are simply sending out entire three hundred page books of MSDSs for their entire inventories and inviting the customer to choose which MSDS applies to his inventory.

For years we have protected our employees by reading the labels of pesticide products. After all, the Environmental Protection Agency has made it a criminal offense to use a pesticide not in accordance with label instructions. The label has always been sufficient to impart the protective information needed for these highly toxic substances. Why has OSHA suddenly decided that an MSDS will do better?

Many of the MSDSs do not even contain the proper protective equipment required on the pesticide label. I question why we should have to keep MSDSs when the label is where we look to find out what to wear, how to mix, apply and handle a specific pesticide. If there happens to be an emergency, the label is the most readily available and logical place to look for emergency information. It takes far too long to look up the MSDS and figure out what it says.

RECOMMENDATIONS

We urge the members of this committee to contact OSHA and direct them to make the label the primary means of imparting warnings and information about chemical products. For non-manufacturers, it is more efficient for workers to obtain their warnings from the labels on containers of chemical products. The

OSHA Hazard Communication Standard already requires that a label be on each chemical container, and that such labels contain all significant dangers and transmit directions for safe handling. If this standard could revolve around a label program rather than a separate data sheet, it would be a much more feasible standard.

Employees then could be entitled to see an MSDS upon written request. The employer should only be required to explain what a material safety data sheet is, how it can be used and indicate a willingness to obtain one. It should then be the employee's responsibility, to digest the additional data contained in the MSDS.

MSDSs should be more uniform and should contain information about other environmental statutes which govern hazardous materials. For instance, an MSDS could tell the employer when possession of a certain quantity of chemical would trigger reporting requirements under the Community Right to Know statute enacted as title III of the Superfund Reauthorization Amendments Act last year. In addition, the MSDS could instruct the user about disposal requirements for containers and excess hazardous product.

We urge the Small Business Committee to exercise greater oversight control over OSHA in the future with regard to their regulations and the impact of their paperwork requirements for small business. We fear this regulation points out that regulatory agencies can ignore the amount of paperwork they generate for small business as long as the paper does not have to be submitted to government. Was it really the intention of this committee when passing the Paperwork Reduction Act to ignore such paperwork burdens?

Finally, OSHA must shoulder more responsibility for telling employers that this standard exists and for training them about how to be in compliance. Worker safety is a socially important goal. No thoughtful business-person would jeopardize the health of any employee. However, there also ought to be an effective way to inform the workforce about hazardous materials that does not in itself generate vast quantities of paper. OSHA's effort ought to be directed towards creating regulations which make such cautionary information simple and direct.

Thank you.

The CHAIRMAN. Thank you. Let me say that you four gentlemen who represent various industries and interests who are being subjected to this have all expressed yourselves extremely well.

I do not know when I have ever heard four people before this Committee who give such common sensical, concerned, and serious testimony. All of us here know that we have to protect people in the workplace. And what I thought when I came here today was a rule gone awry, I am now convinced has become an absolute monster.

The rules are unnecessarily burdensome, unnecessarily expensive, and simply must be revisited. I thank all of you for coming to be with us today and giving us these fine statements.

Our next panel is Mr. David Loving, managing director of the National Retail Hardware Association; Mr. Thomas J. Godwin, president, D and G Electric Co., representing the American Subcontractors Association; Mr. John Bishop, Gurnee Heating & Air Conditioning, representing Associated Builders & Contractors; and Mr. David Showers, vice chairman, National Association of Homebuilders.

Mr. LOVING.

STATEMENT OF DAVID W. LOVING, MANAGING DIRECTOR, NATIONAL RETAIL HARDWARE ASSOCIATION

Mr. LOVING. Good morning Mr. Chairman. My name is David Loving and I am the managing director of the National Retail Hardware Association.

On behalf of the more than——

The CHAIRMAN. Let me interrupt you. My father, in 1937, was president of the Arkansas Retail Hardware Association and they gave him $300 to go to Los Angeles to the national convention. We went, we were gone 3 weeks and got home with $125.

But more than that, I never will forget they had this big dinner at the Biltmore Hotel in Los Angeles; carpets seemed to me like they were that thick. A thousand people there, a lot of them in black tie, and my brother and I were in overalls, which was the best we had.

Country as we were, we had enough sense to know that we were out of place and we were embarrassed about it. My father sensed that and the next day he gave us the typical lecture about what you wore was not important, you were clean and you were well-scrubbed and your clothes were clean. So that satisfied us.

About 2 months ago, I was speaking in that very same ballroom, which has been magnificently refurbished, and told about a thousand people in black tie that that was not the first time I was in the ballroom. But I was dressed slightly differently that night than I was in the first place.

But the Retail Hardware Association gave us the first chance to see anything outside of Franklin County, AR.

Mr. LOVING. We still have that convention every year.

The CHAIRMAN. That story does not have anything to do with the reason we are here, but I knew you would find that a scintillating story.

Mr. LOVING. Good morning. My name is David Loving and I am the managing director of the National Retail Hardware Association.

On behalf of the more than 40,000 independent and chain hardware stores, home centers, and lumber retailers represented by our association, I would like to thank you and the Committee for affording me the opportunity to testify today.

Considering that hardware stores are often staffed by the owner and members of the immediate family, safety has been, and will continue to be, of the utmost importance to our members. Because safety is such a high priority, we believe that Federal Hazard Communication Standards should be both practical to implement and helpful to the worker.

Unfortunately, our experiences to date indicates that this standard meets neither of these goals. Seeking modification of the rule, I testified on behalf of the Association in December at the Department of Labor Hazard Communication Standard public hearings. I described the burdens posed by the MSDS system and displayed the hazard communication packages that the NRHA has produced for its members. After 2 months, OSHA finalized the Hazard Communication Standard and published it in the Federal Register.

To our dismay, none of the popular suggestions for modification had been incorporated into the finalized draft.

Mr. Chairman, I would like to state for the record that we continue to have significant problems with the standard.

The cause of most of our grievances is the use of the Material Safety Data Sheet system, which is a provision that was drafted for the manufacturing sector and, subseqeuntly, applied to the nonmanufacturing sector. Briefly, this is why we object to this system:

One is the format. MSDSs are very technical documents. They are not easily comprehensible and essential data is mixed with information that may not be as essential.

Two, the separate document concept. MSDSs have to be kept on file either physically or by computer. This separates the information from the exact site of a potential accident. A more effective method may be to have this information placed upon the product itself.

Three, the administrative burden. Current law requires us to maintain hundreds or thousands of the Materials Safety Data Sheets per store; that depends upon the size of the store and the scope of its inventory. Larger stores have encountered some success in this effort only after having invested thousands of dollars in computerized MSDS inventory systems.

Smaller stores, however, cannot afford such equipment and are forced to manually file, inventory, and distribute these documents. Under either system, many man hours are devoted to redundant clerical tasks that otherwise could be spent on the other aspects of hazard communication.

As I mentioned in my December testimony, our estimates for the first-year compliance would cost our industry $120 million, and to cover this cost would require sales of $3.7 billion.

Fourth, the use of the downstream retailer as the distribution point. The retailer is the least centralized figure in the whole distribution chain. As we mentioned in our December testimony, offi-

cials from the Loctite Corp. have stated that should the retailers be removed from the distribution process, their firm's paper stream would be reduced by 50 percent.

To simplify this system and actually increase worker safety, the National Retail Hardware Association and the Home Center Institute Safety Action Council have formulated these suggestions:

One, develop a core information standard. OSHA should determine the minimum type and amount of information that employees require on the job, and make provisions for the more technical data to be available quickly from the manufacturer or from some other central information clearinghouse.

Two, eliminate the paperwork burden associated with MSDS. One method of relieving distributors and retailers of this crushing administrative burden would be to require that MSDS information be physically attached to the product in its packaging. Making the information thus inseparable would ensure that it travels all the way through the distribution chain.

Alternatively, OSHA could require that this core information be printed on the product or its container. This labeling method has many advantages. Its location would constantly keep it within the view of the employees, and no time would be lost in locating it when it was needed.

Also, it would eliminate the need for sophisticated MSDS filing and inventory systems.

Three, work more closely with the private sector. We believe that hazard communication should be a dynamic, ongoing joint project between the Government and private business. We would like OSHA representatives to work with our safety experts as they create and we create programs and manuals, which we have done.

We would like to encourage OSHA to support debate and innovative approaches to worker-safety questions.

To sum up, Mr. Chairman, the current Hazard Communication Standard frustrates employer compliance efforts and produces unnecessary paperwork. If OSHA were to revise the standard for nonmanufacturers, worker-safety could be enhanced while employers could be relieved of their inappropriate burden.

[The prepared statement of Mr. Loving follows:]

TESTIMONY OF DAVID W. LOVING

MANAGING DIRECTOR

NATIONAL RETAIL HARDWARE ASSOCIATION

Good Morning, Mr. Chairman. My name is David W. Loving and I am the Managing Director of the National Retail Hardware Associaton. On behalf of the over 18,000 independant and chain hardware stores, home centers, and lumber retailers represented by our association I would like to thank you and the committee for affording me the opportunity to testify today.

Considering that hardware stores are often staffed by the owner and members of the immediate family, safety has been, and will continue to be, of the utmost importance to our members. Because safety is such a high priority, we believe that the federal Hazard Communication Standard should be practical to implement and provide the information that workers should know to protect themselves. Unfortunately, our experience to date indicates that the standard meets neither of these goals.

Seeking modification of the rule, I testified on behalf of the association in December at the Department of Labor Hazard Communication Standard public hearings. I described the burdens posed by the MSDS system, and displayed the Hazard Communication packages that NRHA has produced for its members. Two months later OSHA finalized the Hazard Communication Standard and

published it in the Federal Register. To our dismay, no changes had been made in response to questions raised at the hearing. Mr. Chairman, I would like to state for the record that we continue to have significant problems with the Standard.

The cause of most of our grievances, the use of the Material Safety Data Sheet system, is a provision that was drafted for the manufacturing sector, and subsequently applied to the non-manufacturing sector. Briefly, this is why we object to this system:

1. **Format:** MSDS's are very technical documents. They are not easily comprehensible, and essential data is mixed with information that may not be as critical for the worker to know.

2. **Separate Document Concept:** MSDS's have to be kept on file, either physically or on a computer. This creates a lot of work for the retailer. We would prefer a system that would dispose of this requirement.

3. **The Administrative Burden:** Current law requires us to maintain hundreds or thousands of the Material Safety Data Sheets per store, depending upon the size of the establishment and the scope of its inventory. Larger stores have encountered some success in this effort only after having invested thousands of dollars in computerized MSDS inventory systems. Smaller stores, however, can't afford such equipment, and are forced to manually

file, inventory, and distribute these documents. Under either system, many burden-hours are devoted to redundant clerical tasks that otherwise could be spent on the other aspects of Hazard Communication.

4. **Use of the Downstream Retailer as the Distribution Point:** The retailer is the least centralized figure in the distribution chain. As we mentioned in our December testimony, officials from the Loctite Corporation have stated that, should the retailers be removed from the distribution process, their firm's paper stream would be reduced by fifty percent!

To simplify the system and actually increase worker safety, the National Retail Hardware Association and Home Center Institute Safety Action Council have formulated these suggestions:

1. **Develop a Core-Information Standard:** OSHA should determine the minimum type and amount of informaton that employees need to perform their job tasks safely. Core-information could be further simplified by assigning similar risks color codes and numbers, making risk recognition almost instantaneous.

2. **Eliminate the Paper-Work Burden Associated with MSDS's:** One method of relieving distributors and retailers of this crushing administrative burden would be to require that

hazard communication be physically attached to the product or its packaging. Making the information thus inseparable would ensure that it travels all the way through the distribution chain.

Alternatively, OSHA could require that this "core information" be printed on the product or its container. This "labelling" method has many advantages. Its location would constantly keep it within view of the employees, reminding them to take proper precautions. Also, it would eliminate the need for sophisticated MSDS filing and inventory systems.

3. **Work more Closely with the Private Sector:** We believe that Hazard Communication should be a dynamic, ongoing joint project between the government and private business. We would be like OSHA representatives to work with our safety experts as they create programs and manuals. For example (HAVE DAVID POINT TO PRODUCTS BROUGHT FOR DEMONSTRATION PURPOSES) our industry Safety Action Council has generated these books, videotapes, and protective kits to assist our members to comply with the standard. We would like to encourage OSHA to support debate and innovative approaches to Worker Safety questions.

To sum up, Mr. Chairman, the current Hazard Communication Standard frustrates employers compliance efforts and produces unnecessary paperwork. If OSHA were to revise the standard for non-manufacturers, worker safety could be enhanced while employers would be relieved of inappropriate burdens.

The CHAIRMAN. Thank you very much Mr. Loving.
Mr. Godwin.

STATEMENT OF THOMAS J. GODWIN, JR., PRESIDENT, D&G ELECTRIC CO., INC., BIRMINGHAM, AL

Mr. GODWIN. My name is Tommy Godwin. I am president of D & G Electric Co., a family-owned electrical contracting firm in Birmingham, AL. I am also president-elect of the American Subcontractors Association.

First let me state up front that ASA is not opposed to hazard communication. Done properly, hazard communication is a valuable tool to protect the employee. However, the OSHA Hazard Communication Standard as currently written will not afford employees the protection they need and deserve.

Under HazCom, the main method of hazard information is supposed to come from a Material Safety Data Sheet. MSDSs are complicated, technical documents which can run up to 15 pages in length, and are written by and for health professionals, not the small business owner.

OSHA estimated that as a specialty contractor I should have an average of 12 hazardous substances and would spend a mere $169 a year for compliance. Mr. Chairman, $169 will not even cover the cost of copying the MSDSs I have received.

Currently, I have over 100 MSDSs on everything from batteries to hand cleaner. Thousands of MSDSs have been created for products which pose little danger to anyone besides a small child.

This means that I have to train my employees not to eat wallpaper because it may give them constipation; not to use too much hand cleaner because it may dry their skin; and to beware of bag limestone chips because the bag is hazardous.

Subcontractors such as myself have to rely on the downstream flow of MSDSs to be in compliance with HazCom. The MSDS must go from the manufacturer to the wholesaler to the retailer or to the supplier. But it frequently does not make it all the way to me.

Consequently, I have to spend additional time contacting my suppliers to obtain MSDSs, while documenting these attempts in case I am inspected or sued in the meantime.

In addition, under HazCom, all contractors must maintain copies of the MSDSs on all their jobsites, as well as a copy of the written HazCom Program.

At any given time I am working on a dozen projects simultaneously. I have to copy 100 MSDSs for each of these jobs with the average MSDS being 4 pages in length. As a result, I must have 4,800 pieces of paper scattered around the State of Alabama to meet the MSDS requirements of HazCom.

I have yet to even have one employee ask to see one of these documents. Almost all of the same information in understandable language can be found on the product labels. In addition, because of high employee turnover, contractors will be conducting HazCom training several times a week for hours on end because OSHA does not allow certified HazCom training.

Of course, I need to document all this training so I can protect myself.

Now, I would like to suggest ways to improve HazCom to relieve some of the burden on employers while making the program more accessible to employees.

First, OSHA must reconsider the overall utility of the MSDSs requirements and shift the emphasis of HazCom to product labels. OSHA has demonstrated little desire or ability to put the current MSDS system in check.

If current labeling practices are deficient, then OSHA should upgrade labeling standards and eliminate the MSDS requirements for HazCom. If MSDSs are to remain, then OSHA should be required to develop a standardized MSDS system strictly limiting and controlling the information allowed on the sheets.

The Canadian Center for Occupational Safety and Health, funded by the Canadian Government, maintains a data base of over 45,000 MSDSs for public access. The center has also created "chemical infograms" on many hazardous chemicals. These are simple, 1-page documents which explain the proper handling of such chemicals.

A copy of one of these is attached to my written statement.

OSHA should also create a finite list of substances covered by HazCom. One of the main reasons so many MSDSs have been created is because no one is sure what is or is not covered by HazCom. If OSHA cannot say for sure, how is a small business person supposed to judge?

In addition, OSHA should allow basic hazard training to be transferred from one employee to the next as long as it is updated annually. Congress should also require OSHA to inform employers of HazCom's existence.

When we had to comply with the new immigration law in 1987, the INS mounted an educational campaign to make sure we filled out only one form. OSHA has relied on businesses finding out about HazCom through trade associations. But, most small businesses do not belong to any association.

ASA urges Congress to require OSHA to inform employers about HazCom and to appropriate funds for such an effort.

Finally, Congress should also take steps to make sure that a paperwork folly such as this never happens again. When OMB tried to enforce the Paperwork Reduction Act on HazCom, the Third Circuit U.S. Court of Appeals ruled that the PRA did not apply to HazCom.

Former Senator Lawton Chiles, the author of the PRA, has urged the Supreme Court to overturn the Third Circuit decision. Congress should step in and strengthen the PRA to clarify that it does apply to the Government-mandated collection of paperwork.

ASA and other groups have urged OSHA for several years now to make modifications to HazCom. The concepts I have outlined here are not new ones but the agency has consistently turned a deaf ear to us. OSHA needs to open its eyes to the problem, but it is going to require Congress to remove the blindfold.

Thank you Mr. Chairman.

[The prepared statement of Mr. Godwin follows:]

THE PAPERWORK REQUIREMENTS OF THE OSHA HAZARD COMMUNICATION STANDARD

Statement of Thomas J. Godwin, Jr.

Mr. Chairman, my name is Thomas Godwin. I am president of D & G Electric Company, a family-owned electrical contracting firm in Birmingham, Alabama. I am also president-elect of the American Subcontractors Association (ASA).

ASA is a national construction trade association with more than 9,000 member firms representing all major construction trades in 70 chapters nationwide. In addition to its individual company members, ASA represents 16 other specialty trade associations with members of their own. ASA is the only national organization that speaks exclusively for the interests of union and open shop subcontractors, regardless of trade specialty.

First, let me state up front that ASA is not opposed to hazard communication. Done properly, hazard communication is a valuable tool to protect employees from injury or illness as a result of exposure to hazardous substances. However, the OSHA Hazard Communication Standard, as currently written, will not afford employees the protection they need and deserve.

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OSHA scientists and bureaucrats have written and implemented a vague, confusing and cumbersome standard which OSHA officials themselves have trouble explaining to small business owners. Most business people don't even know that HazCom exists. Those that do have no idea how to cope with the massive paperwork requirements which HazCom imposes on them.

OSHA considers HazCom to be the cornerstone of its mission in the workplace. Yet the fact that the agency can issue a single regulation affecting 4.5 million businesses employing 59 million people and have no system to inform employers beyond a notice in the Federal Register is government mismanagement at its worst.

It is shockingly evident to every small business person in this nation that OSHA did not adequately plan the implementation of HazCom. The agency has created a paper avalanche that has inundated small businesses and has made them vulnerable to untold liability.

Under HazCom, the main method of hazard information is supposed to come from Material Safety Data Sheets (MSDSs). MSDSs are created by product manufacturers and list everything one should know about the proper handling of the product. They are complicated, technical documents which can run up to 15 pages in length and are written by and for health professionals, not the small business owner.

I'm sure OSHA will claim that we are overreacting to the MSDS problem. The agency estimated that as a specialty contractor, I should have an average of 12 hazardous substances and would spend a mere $169 in the first year of compliance. Mr. Chairman, $169 won't even cover the cost of copying all the MSDSs I've received. Currently, I have over 100 MSDSs on everything from batteries to hand cleaner.

The abundance of MSDSs stems from that fact that the product manufacturer makes the sole determination as to whether his product is hazardous and whether to create an MSDS. There is no finite list of substances which are covered by HazCom, so manufacturers have created MSDSs on everything and anything to cover their own liability.

As a result, thousands of MSDSs have been created for products which pose little danger to anyone besides a small child. This means I have to train my employees not to eat wallpaper because it may give them constipation, not to use too much hand cleaner because it may dry their skin, and not to drink the copier toner because it is proven to be toxic on fathead minnows.

The problem is made worse by the meaningless OSHA consumer products exemption which allows me to exempt these benign products from my HazCom program only if I can demonstrate that I'm using them just like the average consumer.

Subcontractors such as myself have to rely on the downstream flow of MSDSs to be in compliance with HazCom. The MSDS must go from the manufacturer to the wholesaler to the retailer or the supplier before it gets to me. Unfortunately, many of these people are unaware of their responsibilities under HazCom and the MSDS frequently doesn't make it all the way to me. Consequently, I have to spend additional time contacting my suppliers to obtain MSDSs, while documenting these attempts in case I'm inspected or sued in the meantime.

It's just like the old parlor game of telling a story to a chain of people and seeing how it turns out when the last person repeats the story. We all know that the story turns out garbled. The same is true for this MSDS system OSHA has created.

For the construction industry, the HazCom requirements on multi-employer worksites demonstrates little knowledge on OSHA's part of the real world of construction. All contractors on a jobsite must maintain copies of their MSDSs on all of their jobsites, as well as a copy of their written HazCom program. In addition, I must inform my employees of any hazards other contractors on the jobsite may expose them to even though dozens of contractors are coming and going at all times.

At any given time, I'm working on a dozen projects simultaneously. I have to copy 100 MSDSs for each of these jobs, with the average MSDS being four pages in length. As a result, I

have to have 4800 pieces of paper to meet the MSDS requirements of HazCom. I have yet to have an employee ask to even see one of these documents, because almost all of the same information in understandable language can be found on the product labels.

This system created by OSHA is a liability timebomb waiting to explode on the unsuspecting small business owner. Because OSHA has conducted no outreach, each employer who receives an MSDS and fails to implement a HazCom program or does it incorrectly automatically opens himself up to a liability lawsuit.

In addition, we in construction and other industries with transient workforces will be conducting HazCom training several times a week for hours on end because OSHA doesn't allow certified HazCom training. Even if an employee received training the previous week from another employer, we have to do it again. Of course, I need to document all this training as well to protect myself.

Now that I've pointed out some of the major paperwork problems of HazCom, I'd like to suggest ways to improve HazCom to relieve some of the burden on employers while making the program more accessible to employees.

Recommendations

First, OSHA must reconsider the overall utility of its MSDS

requirements and the extent to which product labels are more appropriate to satisfy the safety needs of employees. The current MSDS system is obviously out of control and OSHA has demonstrated little desire or ability to put the system in check. Labels will always be the source of immediate information for employees. If current labeling practices are deficient, as OSHA will claim, then the agency should issue upgraded labeling standards and eliminate the MSDS requirements for HazCom.

If eliminating MSDSs entirely is not politically feasible, then OSHA should be required to develop a standardized MSDS system strictly limiting and controlling the information allowed on the sheets. Manufacturers should be required to submit them to OSHA for review. The agency should maintain a database of MSDSs which would be available to both employers and employees.

The Canadian Center for Occupational Safety and Health, funded by the Canadian Government, maintains a database of 45,000 MSDSs for public access. The Center has also created "Chemical Infograms" on many hazardous chemicals. They are simple, one-page documents (see Attachment A) which explain the proper handling of such chemicals.

In any event, MSDSs should not be required on any consumer products regulated by the Consumer Product Safety Commission.

OSHA should also create a finite list of substances covered by HazCom. One of the main reasons so many MSDSs have been

created is because no one is sure what is and isn't covered by HazCom. If OSHA can't say for sure, how is the small business person supposed to judge?

OSHA will undoubtedly say that the list would be far too long and it would be constantly changing. It doesn't matter how long the list is, as long as it is a finite list. OSHA could update it annually with additions and deletions.

In addition, OSHA should allow basic hazard training to be transferred from one employer to the next, as long as it is updated annually. Employees should be able to carry cards authorized by OSHA and signed by their instructor which attests to their training. Their current employer would only have to train on job-specific hazards.

Congress should also require OSHA to inform employers of HazCom's existence. When we had to comply with the new immigration law in 1987, the INS mounted an education campaign, took out ads in newspapers, staffed a toll-free hotline, produced videos, and sent information to every employer in the nation. And that was to make sure we filled out one form.

OSHA is requiring us to write a company HazCom program, collect MSDSs on all hazardous products, make sure the products are labeled correctly and then provide right-to-know training for all of our employees. Where is the employer's right to know what he is required to do?

OSHA officials will tell you that they are working diligently with trade associations to get out the word. I challenge OSHA to name one trade association it offered help to without that association having to plead for assistance from the agency first. As the Committee is also aware, most small businesses don't belong to trade associations. How are these employers supposed to find out about the standard?

OSHA will claim it doesn't have the funds to educate. ASA urges Congress to appropriate funds for OSHA to inform employers about HazCom. According to SBA, the INS printed and mailed 6.6 million booklets on the immigration law. The printing cost $500,000 and the postage cost $660,000. Congress should take steps to make sure OSHA is required to undertake a similar effort and has the funds to do it.

Finally, Congress should also take steps to make sure that a paperwork folly such as this never happens again. Currently, the Senate Governmental Affairs Committee is considering reauthorization of OMB's Office of Information and Regulatory Affairs. OIRA is charged with enforcing the Paperwork Reduction Act of 1980 (PRA).

When OIRA tried to disapprove portions of HazCom as violating the PRA, the Third Circuit U.S. Court of Appeals said the PRA did not apply to HazCom because it only required the collection and maintenance of paper, rather than its transmittal to the government. The issue of whether the PRA applies to

HazCom will be decided by the Supreme Court later this year. Former Sen. Lawton Chiles (D-Fla.), the author of the PRA, has urged the Supreme Court to overturn the Third Circuit Decision (see Attachment B).

Congress should step in and strengthen the PRA to clarify that the Act does apply to the collection and maintenance of information. Congress should also permanently reauthorize OIRA.

Summary

ASA and other groups have urged OSHA for several years now to make modifications to HazCom (see Attachment C). The concepts I've outlined are not new ones, but the agency has consistently turned a deaf ear to us. It is unfortunate that we feel compelled to turn to Congress to solve this problem, but all other avenues have been exhausted.

OSHA officials sincerely believe they have developed the correct system for HazCom to work. It's evident that none of these officials has attempted to run a small business.

We also must remember that OSHA has to rely on voluntary compliance for the agency meets its mission. Its limited resources dictate as much. The current HazCom system itself is the biggest deterrent to voluntary compliance.

OSHA needs to open its eyes to the problem, but it's obviously not going to happen without assistance from Congress.

Without an attempt to solve the problems, the Hazard Communication Standard will not protect workers and it will crush many small business.

HazCom is crying out for change.

Thank you, Mr. Chairman

Canadian Centre for Occupational Health and Safety

METHYL ETHYL KETONE (MEK)

CAS 78-93-3

ATTACHMENT A

CHEMICAL INFOGRAM

DESCRIPTION

Colourless liquid. Vapour has a strong, sweetish odour. Used as a solvent for adhesives, coatings, paint removers, resins and inks; and as a cleaning agent.

EFFECTS OF SHORT-TERM OVEREXPOSURE

Inhalation: Irritation of nose and throat, headache, dizziness, confusion, tiredness, numbness in the fingers and arms, nausea and a feeling of drunkenness. In extreme cases, causes unconsciousness.

Eye Contact: Vapour can cause irritation. Liquid causes severe temporary eye irritation.

Skin Contact: Liquid or concentrated vapour causes drying and cracking of skin. Skin absorption produces symptoms similar to those of inhalation.

Ingestion: Ingestion produces symptoms similar to those of inhalation.

EFFECTS OF LONG-TERM OVEREXPOSURE

Methyl ethyl ketone may cause drying, cracking and reddening of the skin and temporary eye irritation. Severe exposures may cause temporary liver injury. Exposure to other solvents such as n-hexane or carbon tetrachloride may increase effects.

FIRE AND EXPLOSION

Flammable. Possible explosion hazard. Extinguish fires with carbon dioxide, dry chemical or alcohol foam. Water is not suitable and, if used, may cause the fire to spread. Keep sealed containers cool with a water mist.

CHEMICAL REACTIVITY

Normally stable. Reacts with oxidizing agents such as peroxides, chlorinated solvents such as chloroform and strong bases such as sodium hydroxide.

PERSONAL PROTECTION

Inhalation: Wear suitable respiratory protection if vapour concentration is unknown or exceeds exposure limits.

Skin: Wear gloves, coveralls, boots, pants, jacket and apron as required. A suitable material is neoprene. Have a safety shower/eye-wash fountain readily available in the immediate work area.

Eyes: Wear chemical-splash goggles or a face shield.

FIRST AID

Inhalation: Remove source of methyl ethyl ketone or move victim to fresh air. If breathing has stopped, begin artificial respiration.

Eye Contact: Flush the affected eye with lukewarm, gently flowing water for at least 20 minutes, holding the eyelid open.

Skin Contact: Flush affected area with lukewarm, gently running water for at least 20 minutes. Under running water, remove contaminated clothing.

Ingestion: Never give anything by mouth if victim is losing consciousness, or is unconscious or convulsing. Rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink about 250 mL (8 oz) of water.

Note: Obtain medical advice IMMEDIATELY. Consult a physician and/or the nearest Poison Control Centre for all exposures, except minor instances of inhalation or skin contact.

STORAGE AND HANDLING

Store methyl ethyl ketone in tightly-closed containers in a cool area with adequate ventilation, away from normal work areas and sources of heat or sparks.

CLEAN-UP AND DISPOSAL

Provide adequate ventilation, protective clothing and respirators. Remove all sources of heat or flame. Absorb liquid on dry clay, sand or other absorbent material.

It may be possible to burn waste material in an approved incinerator or dispose of in a designated landfill site. Comply with environmental regulations.

For additional information on this chemical, see CHEMINFO record no. 2 / Chemical Hazard Summary No. 1, available from CCOHS.

250 Main Street East, Hamilton, Ontario, L8N 1H6 ISSN 0835-8176 (416) 572-2981 Telex: 061-[illegible]

ATTACHMENT B

No. 88-1434

IN THE SUPREME COURT OF THE UNITED STATES
OCTOBER TERM, 1988

ELIZABETH DOLE, SECRETARY
OF LABOR, ET AL.,

PETITIONERS,

v.

UNITED STEELWORKERS OF AMERICA, ET AL.

RESPONDENTS.

ON PETITION FOR A WRIT OF
CERTIORARI TO THE UNITED STATES
COURT OF APPEALS FOR THE THIRD CIRCUIT

BRIEF OF LAWTON CHILES AS AMICUS CURIAE
IN SUPPORT OF THE PETITION FOR CERTIORARI
TO THE UNITED STATES COURT OF APPEALS
FOR THE THIRD CIRCUIT

WAYNE HARTKE, ESQ.*
HARTKE & HARTKE
7637 Leesburg Pike,
Falls Church, Va. 22043
(703) 734-2810

*Counsel of Record

April 3, 1989

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Federal Reports Act of 1942,
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Pub. L. 93-153, section 409. 5

Pub. L. 93-556, 93rd Congress, 88 Stat. 1789. 7

Other Authorities:

"Efforts to Reduce Federal Paperwork Burdens", Hearing before the Subcommittee on Federal Spending Practices and Open Government of the Committee on Governmental Affairs, United States Senate, 95th Congress, 2nd Session, June 28, 1978. 9

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H.R. 6410, see "Paperwork Reduction Act of 1980", Hearings before a Subcommittee on Government Operations, House of Representatives, 96th Congress, 2nd Session, February 7, 21, and 26, 1980. 10, 11, 12

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INTEREST OF THE AMICUS CURIAE

As a member of the United States Senate, Amicus Lawton Chiles was the Senate sponsor and an author of the Paperwork Reduction Act of 1980, and the Senate sponsor of amendments to the Act contained in the Paperwork Reduction Reauthorization Act of 1986.

I support the Paperwork Reduction Act. I believe the Third Circuit has fundamentally misread the Act, and misconstrued its statutory scheme.

The Third Circuit opinion holds:

> "In one sense the [OSHA] standard requires chemical manufacturers to collect and transmit information [to other members of the public], and employers to collect and maintain information [for disclosure to other members of the public]. It would be a far-fetched interpretation of the Paperwork Reduction Act of 1980, however, to hold that these activities fell within its coverage." 855 F2d 108, at p. 113.

I respectfully disagree with this holding of the Third Circuit. It is inconsistent with two other Circuit Court opinions.

SUMMARY OF REASONS FOR GRANTING THE PETITION

(1) The Third Circuit opinion ignores the language of the statute and applicable legislative history. The Senate and the House of Representatives explicitly considered whether collection and maintenance of information for disclosure by one private party to another (or to the public as a whole) required by regulation should be subject to the Act, and decided, yes, that it should.

(2) In United States v. Bruce Smith, 866 F2d 1092 (9th Circuit, No. 87-3020, decided January 23, 1989), the Circuit Court reversed criminal convictions because the Forest Service failed to comply with provisions of the Paperwork Reduction Act.

Had the convicted appellants filed the same appeal in the Third Circuit, the result -- based at least on the effusive dicta in the Third Circuit opinion -- would have been different.

DISCUSSION

I. REVIEW IS NECESSARY TO CORRECT A MISREADING OF THE STATUTE AND THE APPLICABLE LEGISLATIVE HISTORY.

It is clear that the Paperwork Reduction Act covers "recordkeeping" (44 U.S.C. 3502(4) and (11)).

We in Congress specifically defined the term "recordkeeping" to mean a "requirement imposed by an agency on persons to maintain specified records." (44 U.S.C. 3502(17)). On its face, this definition contemplates a federally sponsored requirement which entails maintaining information for public, third party, or other disclosure purposes.

The notion that the information maintained must eventually go to or be used

by the government is clearly not implied by the language of this definition. To the contrary, prior to enactment we explained just the opposite. This "definition includes information maintained by persons which may be but is not necessarily provided to a Federal agency." (Senate Committee Report, No. 96-930, 96th Congress, 2nd Session, at p. 40).

Had the Third Circuit reviewed the legislative history behind why Congress specifically defined the term, that court would have discovered explicit consideration of whether regulations which require persons to disclose information to third parties should be covered by the clearance requirements of the Act. Both the House and Senate spoke directly to this precise issue.

The Comptroller General of the United States was the reason. In 1973, the

Congress amended the Federal Reports Act and gave the General Accounting Office (GAO) the clearance authority previously held by the Director of the Office of Management and Budget (OMB) for information collected by the independent regulatory agencies. (Pub. L. 93-153, sec. 409). The Comptroller was frustrated in his efforts to perform his clearance responsibilities because several agencies resisted the GAO's efforts by asserting, among other things, that disclosure requirements to third parties were not covered by the Federal Reports Act definition of "information". (See Federal Reports Act of 1942, 44 U.S.C. Section 3502 (1976)).

In a report to Congress in 1976 the Comptroller commented:

> "Two agencies, the Securities and Exhange Commission (SEC) and the Commodity Futures Trading Commission (CFTC), believe that only a small number of their information-gathering

activities are subject to the Federal Reports Act.

SEC believes that some of its activities involve collection of information subject to 44 U.S.C. 3512, but other SEC responsiblities involve the "disclosure" of information to the public rather than collection activities, and accordingly, are not subject to that provision. The SEC contends that, in contrast to other Government agencies which solicit information for their own purposes, SEC serves as a conduit through which information is disclosed to investors pursuant to Federal securities laws. (Report to the Congress by the Comptroller General of the United States, "Status of GAO's Responsibilities Under the Federal Reports Act", OSP-76-14, May 28, 1976, at p. 15).

"... The underlying reasons for these agencies' refusal to submit most of their forms to us for clearance are that they believe this would be an intrusion into their regulatory responsibilities. We disagree with the position of SEC and CFTC and are currently working with these agencies to resolve the issue." (Ibid., at p. 16).

The Comptroller recommended the Congress clarify and strengthen the Federal Reports Act "to allow the clearance agency

to challenge the need for regulatory information." (Ibid. at p. 20).

In 1974, the Congress established the Commission on Federal Paperwork. (Pub. L. No. 93-556, 93rd Congress, 88 Stat. 1789). "The legislation was the result of Congressional concern that the Federal Reports Act of 1942 was not effective in limiting the Federal paperwork burden." (See "Legislative History of the Commission on Federal Paperwork," prepared by the Legislative Digest Section, Office of the General Counsel, United States General Accounting Office, at p. iii). Since the Comptroller General and the Director of OMB were statutory members of the Commission, the issue of whether disclosure requirements to third parties should be covered by the clearance process was thrashed out by that body. (See "The Reports Clearance Process", A Report of the

Commission on Federal Paperwork, September 9, 1977, at p. 43).

The Commission on Federal Paperwork noted:

> "The Act is not clear on its coverage of a major portion of the paperwork burden -- recordkeeping requirements -- although recordkeeping is covered in OMB Circular A-40, the primary guideline instruction, as well as other OMB and GAO guidelines...Not all agencies covered by the Federal Reports Act comply fully with its requirements." (Ibid, at p. 1).
>
> "For years, several of the regulatory agencies, particularly the Federal Trade Commission (FTC) and the Securities and Exchange Commission (SEC) held themselves exempt, not always with success, from the reports clearance control of the Bureau of the Budget. The FTC took the position that its law enforcement responsibilities, mandated by the Congress, required the collection of information from business entities and industries which was for it alone to determine. The SEC took a similar position with regard to the information needed in enforcing the disclosure requirements of the securities laws. There were negotiations and discussions from time to time between the OMB and the agencies concerned, not always with clear-cut resolution. Generally, the

> OMB was not inclined to make a head-on confrontation, nor did it have any specified statutory means to enforce compliance. (Ibid., at p.43).

In June of 1978, when I held Senate hearings on efforts to reduce federal paperwork burdens, the Comptroller General brought his views and that of the Paperwork Commissions to my attention. ("Efforts to Reduce Federal Paperwork Burdens", Hearing before the Subcommittee on Federal Spending Practices and Open Government of the Committee on Governmental Affairs, United States Senate, 95th Congress, 2nd Session, June 28, 1978, at page 45). The term "recordkeeping" was incorporated in the definition of "collection of information" in the bill I introduced in June of 1979. (For text of S. 1411, see "Paperwork and Redtape Reduction Act of 1979", Hearing before the Subcommittee on Federal Spending Practicers and Open Government of the

Committee on Governmental Affairs, United States Senate, 96th Congress, 1st Session, hearing of November 1, 1979, at page 89).

Congressmen Brooks and Horton (who was a co-Chairman of the Paperwork Commission) introduced a House companion to S. 1411 in February of 1980. (For text of H.R. 6410, see "Paperwork Reduction Act of 1980", Hearings before a Subcommittee on Government Operations, House of Representatives, 96th Congress, 2nd Session, February 7, 21, and 26, 1980, at p. 3). When the Comptroller General testified before them he noted that their bill included his recommendations to resolve the problems he and the Paperwork Commission had identified with the clearance process.

> "Section 101 of the bill replaces the Federal Reports Act, incorporating five needed changes. First, recordkeeping requirements

are specifically included in the reports clearance process..." ...

"The Federal Reports Act is presently unclear on whether recordkeeping requirements are subject to clearance. In practice, both GAO and OMB have required that they be cleared. Some agencies, however, have resisted compliance with these efforts." (Ibid., House hearings on H.R. 6410, at p. 39).

The House Committee gathered statements from the Civil Aeronautics Board, the Commodity Futures Trading Commission, the Federal Communications Commission, the Federal Reserve System, and the Securities and Exchange Commission, all of whom raised concerns relating to the proposed changes to the Reports Act. (Ibid., House hearings on H.R. 6410, at p. 313-336).

The SEC had this to say:

"...This expansion of the scope of the Federal Reports Act is of major concern to us. We do not think the purpose of the Bill is, or should be, to subject the Commission's disclosure and enforcement efforts to oversight by the Office of Management and Budget. We do not believe, for example, that OMB should determine whether

> information about possible selfdealing between corporate officers and the company ought to be disclosed in a proxy statement. The definition of "collection of information" is so broad, however, that it could be read as encompassing this information, which is collected on standard, statutorily authorized forms. (Ibid., at p. 331).

On the Senate side, I held hearings in November of 1979 and invited the SEC and FCC to testify publicly on their concerns, since, among other issues, the Senate bill also incorporated the term recordkeeping in its definition of "collection of information" and "information collection requests". Commissioner Evans of the SEC made the identical point to me. (See Hearings on S. 1411, November 1, 1979, at p. 67). Commissioner Brown of the FCC expressed similar concerns. I responded in part:

> "Senator Chiles. Well, we are delighted to get that best advice and that is the reason for this hearing, to get your concerns about it. ... Yet, when we go out into

> the countryside, when we go out and listen to people, they do not feel anybody is doing a good job, the Congress, the executive branch, the independent regulatory agencies, or anyone. They are demanding that something be done. So, again, we are talking about weighing something here. We are talking about not wanting to cripple the mission of the independent regulatory agencies nor the mission of the executive agencies like EPA and OSHA and all of the other agencies that are vital to the well-being of this country. But at the same time, we are trying to put some governor on this thirst for information and some rational decisionmaking processes that Congress can review and that the people can hold accountable, and that we can say we are trying to get a handle on. ("Paperwork and Redtape Reduction Act of 1979," Hearings on S. 1411, 96th Congress, 1st Session, November 1, 1979, at p. 87).

The Congress deliberately chose to retain the definition of recordkeeping that had been recommended to it by the Comptroller General and the Paperwork Commission. Both the Senate and House Reports spoke directly to the point of

whether disclosure requirements were to be covered by the Act's requirements.

> [Senate]: "Information is also collected to form the basis for disclosure to the public. For example, documents filed with the Securities and Exchange Commission by issuers of securities and by other persons subject to the Federal securities laws are designed for use by persons making investment and other financial decisions. In this connection, Federally-mandated disclosures to the public by issuers and certain owners of securities are central to carrying out the purposes of the Federal securities laws. Therefore, in considering whether information will have practical utility, the Director should consider, among other things, whether the agency can use the information either to carry out its regulatory or other functions or to make it available to the public for the use of persons who have an interest in entities or transactions over which the agency has jurisdiction.
>
> The term "recordkeeping requirement" means a requirement imposed by an agency on persons to maintain specified information. The definition includes information maintained by persons which may be but is not necessarily provided to a Federal agency." ("Paperwork Reduction Act of 1980," Senate

Report on S. 1411, Senate Rep. No. 96-930, 96th Congress, 2d Session, September 8, 1980, at pages 39-40).

[House]: "...the definition of "collection of information" clarifies an ambiguity as to the types of information collection covered by the Act. The Comptroller General testified that certain interpretations, such as that by the Securities and Exchange Commission, severely limit the scope of the act and the controls over Federal information collection efforts. ("Paperwork Reduction Act of 1980", House Rep. No. 96-835, 96th Congress, 2d Session, March 19, 1980, at p. 19). ...

"The Committee's intent in making the changes in the definition was to clarify the existing definition to force SEC and any others who might apply a restrictive interpretation to comply with statutory information collection clearance requirements. The Committee fully expects SEC to comply with the "more extensive" definition of collection of information contained in H.R. 6410. (Ibid, at p. 23).

II. REVIEW IS NECESSARY TO RECONCILE DIFFERENCES AMONG THE CIRCUITS ON THE FORCE AND EFFECT OF THE PAPERWORK REDUCTION ACT.

The Paperwork Reduction Act, as a recodification and expansion of the Federal Reports Act of 1942 (44 U.S.C. 3501 et seq., (1976)), is deliberately structured as a coordinated whole, in order to have its various provisions build upon and reinforce each other. Agencies are to justify their need for a recordkeeping requirement and submit their proposal to the Office of Management and Budget. The public is to have early and meaningful opportunity to comment as part of the review process. As the ultimate sanction and public protection, if an agency fails to participate in the statute's review process, or fails to display a current control number, then, "Notwithstanding any other provision of law," the public is not subject "to any penalty for failing to

maintain" information. (Paperwork Reduction Act of 1980, "44 U.S.C. 3512. Public protection.")

In this context, the ruling of the Third Circuit is in conflict with a ruling of the Ninth Circuit in United States v. Smith, 866 F2d 1092 (U.S. Court of Appeals, 9th Cir., No. 87-3020, decided January 23, 1989). In Smith, the Ninth Circuit was faced with determining whether a Forest Service regulation, promulgated pursuant to the agency's statutory mission, entailed an "information collection request" within the meaning of the Paperwork Reduction Act. Judgments of conviction had been entered against the appellants. That Court had to further decide whether Section 3512 of the Act prohibited the judgments of conviction entered against the appellants. The Court ruled the regulation did constitute an information collection request, that it did

not display a current control number as required by section 3512 of the Act, and reversed the convictions.

In acknowledging a statutory scheme underpinning the Paperwork Reduction Act which culminates in the Public Protection section, (44 U.S.C. Sec. 3512), the Ninth Circuit recognized that an agency engaged in enforcing criminal sanctions of its substantive programs was not relieved from its responsibilities under the Paperwork Reduction Act. The Court thereby affirmed a fundamental premise of the Paperwork Reduction Act that every person is entitled to be assured that their government has checked the need for information before it asks them to provide or maintain information.

Certainly, the pursuit of criminal sanctions by an agency "embodies

substantive policy decision making". (See 3rd Cir. opinion 855 F2d at p. 112).

In contrast, the Third Circuit, relying on an isolated reading of two provisions -- 3504(a) and 3518(e) -- and not on the provisions of the Act as a whole, suggests that if an agency activity involving the collection of information also involves substantive policies and programs, it is relieved from its responsibilities under the Paperwork Reduction Act to submit its proposals to the Director and the public for review. (See 3rd Cir. opinion, 855 F2d 108, at p. 113).

To fall outside the scope of the Director's responsibilities is to fall outside the scope of the public protection afforded by section 3512 of the Paperwork Reduction Act. Had appellants in Smith, supra., pled their case in the Third Circuit the result would have been

different. The two Circuits are in conflict on the scope of this basic right afforded by the Paperwork Reduction Act. The Court should review this conflict between the Circuits and uphold the integrity of the Paperwork Reduction Act.

The discussion presented herein with regard to the proper interpretation of the Paperwork Reduction Act applies equally to the issues raised in the pending Petition for Writ of Certiorari in No. 88-1075, Associated Builders and Contractors, Inc. and the Construction Industry Trade Associations v. OSHA.

I also note the opinion of the Third Circuit is in conflict with the ruling of the D.C. Circuit in Action Alliance of Senior Citizens v.Bowen, 846 F.2d 1449 (D.C. Cir. 1988), petition for cert. pending (No. 88-849).

SUMMARY

As I noted when Congress amended the Paperwork Reduction Act in 1986:

> "A fundamental premise of the Paperwork Reduction Act is that every citizen is entitled to have their Government check the need for information requests made of them."
> ...
>
> "The law was intended to be comprehensive in its coverage of federally sponsored "collections of information." Exemptions to this coverage, either by agency or by class of information were specifically set out in the definitions of section 3502 or the savings provisions of section 3518. The notion the law was dedicated primarily to "forms, questionnaires, and surveys" and not to other instruments such as reporting, recordkeeping, and disclosure requirements which are means to carry out federally "sponsored collections of information" is a fundamental misreading of what the law states, what the Congress of 1980 intended, and what this Committee affirms in the amendments of 1986..." (Statement of Sen. Chiles upon Senate passage of the Paperwork Reduction and Reauthorization Act of 1986, Congressional Record, Oct. 16, 1986, at p. 16740).

This Third Circuit opinion interprets the Paperwork Reduction Act in a way

directly contrary to the intent of the Senate and the House of Representatives when they constructed the statute in 1980 and amended it in 1986. The 3rd Circuit opinion is also inconsistent with an interpretation of the Paperwork Reduction Act expressed by the 9th Circuit and the D.C. Circuit.

CONCLUSION

For these reasons, Amicus Lawton Chiles joins the Solicitor General of the United States in requesting the Court grant a Petition for Writ of Certiorari.

Respectfully submitted,

LAWTON CHILES, AMICUS CURIAE
BY COUNSEL

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ATTACHMENT C

Construction Industry Hazard Communication Coalition

October 28, 1988

Docket Officer
Docket H-022D
Occupational Safety and Health Administration
200 Constitution Avenue, N.W., Room N3670
Washington, D.C. 20210

Dear Sir:

Re: Comments and Request for Hearing by the Construction Industry Hazard Communication Coalition Proposed Revisions to OSHA Hazard Communication Standard (53 Fed. Reg. 29,821)

I. INTRODUCTION

On August 8, 1988, OSHA published in the Federal Register a Notice of Proposed Rulemaking proposing certain modifications to the OSHA Hazard Communication Standard (HCS).[1/] The purpose of this letter is to express the concerns of the Coalition of Construction Industry Trade Associations[2/] about OSHA's proposal, to suggest regulatory alternatives, and to submit data supporting our suggested alternatives. The Coalition also hereby requests the

1/ The HCS is codified at various places in Title 29 of the Code of Federal Regulations, including Parts 1910.1200, 1915.99, 1917.28, 1918.90, and 1926.59.

2/ The Construction Industry Hazard Communication Coalition consists of 33 trade associations (listed at the end of this letter) representing more than 200,000 employers involved in all aspects of residential, commercial, and highway construction and related activities. The Coalition was formed in late 1987 to represent the interests of the construction industry in matters relating to hazard communication.

Steering Committee

American Subcontractors Association, Inc.
1004 Duke Street
Alexandria, VA 22314
(703) 684-3450

Associated Builders and Contractors, Inc.
729 15th Street, N.W.
Washington, DC 20005
(202) 637-8800

Associated Specialty Contractors, Inc.
7315 Wisconsin Avenue
Bethesda, MD 20814
(301) 657-3110

National Association of Home Builders, Inc.
15th and M Streets, N.W.
Washington, DC 20005
(202) 822-0200

opportunity to present a panel of witnesses at OSHA's informal hearing on the HCS, presently scheduled to begin on December 6, 1988. As we have stated to OSHA in previous submissions, our goal in this effort is not to avoid hazard communication in the construction industry. We are merely attempting to insure that the provisions of any hazard communication rule are reasonably necessary and appropriate to reduce significant risks and can be implemented feasibly on construction industry job-sites.

A. Procedural History of the Revised HCS

1. Prior Proceedings

OSHA promulgated a hazard communication standard for manufacturing employers alone on November 25, 1983. In promulgating the HCS for the manufacturing sector, OSHA declared that the Standard would not apply to non-manufacturers based on the record evidence that the rate of chemical injuries and illnesses in non-manufacturing industries was substantially lower than in manufacturing. While OSHA asserted that certain non-manufacturing employees were "exposed" to hazardous chemicals and that such employees would benefit from hazard communication, the agency cited no evidence that construction industry employees were subject to "significant" risks of injury due to any lack of information about hazard chemicals, not already alleviated by the industry's existing hazard communication requirements.

The United Steelworkers of America and other parties filed petitions for review of the manufacturing HCS with the Court of Appeals for the Third Circuit. The court held in May, 1985, inter alia, that the Secretary had failed adequately to explain why it was not feasible for the same standard to be applied in non-manufacturing sectors. United Steelworkers of America v. Auchter (USWA I), 763 F.d 728, 738 (3d Cir. 1985). The Court directed the Secretary to reconsider the application of the standard to other employers and to extend coverage of the standard to non-manufacturers unless the Secretary could state why such coverage was not feasible.

In response to the Court's order, the Secretary published an Advance Notice of Proposed Rulemaking on November 27, 1985 on the likely impact and feasibility of extending the HCS to non-manufacturing industries. This ANPR did not contain any proposed rule for non-manufacturers, nor did it indicate in any precise way how OSHA proposed to extend or modify the existing, manufacturing HCS so as to apply it to such divergent industries as construction.

The bulk of the ANPR comments received with regard to construction stated that incidents involving workplace injuries or illnesses due to hazardous materials were rare, that existing training and safety measures were sufficient to alleviate any alleged risk of injury from hazardous materials, and that extension of the HCS in its present form to construction would be tremendously burdensome and expensive. Numerous commenters also pointed out the significant differences between construction worksites and other industries' facilities, including problems relating to transient workforces, multiple and ever-changing employers and worksites. The commenters, including some unions, further recommended that any HCS for the construction industry be issued in the form of a "vertical" standard, i.e., one which was specifically tailored to the unique work practices of the construction industry.

Prior to OSHA's taking any action on the ANPR, however, the USWA filed a motion for further relief with the Third Circuit. In response to that motion, the court on May 29, 1987 held that its prior order did not contemplate further rulemaking. The Court ordered the Secretary to publish within sixty days a hazard communication standard applicable to all workers covered by the Act, based on the existing administrative record, or to state why such a standard was not feasible. United Steelworkers of America v. Pendergrass (USWA II), 819 F.d 1263, 1270 (3d Cir. 1987).

Again in USWA II, the Court did not expressly consider whether and how the HCS should be tailored to any specific non-manufacturing industry, including construction. Nor was the Court asked to consider whether all aspects of the HCS were "necessary and appropriate" to reduce identified risks of injury in the construction industry. The Court also was not presented with, nor did it consider, how OSHA should comply with the review and consultation provisions of such statutes as the Paperwork Reduction Act, the Construction Safety Act, and the Regulatory Flexibility Act, in extending the HCS to the construction industry.

In any event, OSHA complied with the Court's order by publishing its revised HCS for all non-manufacturing industries on August 24, 1987. OSHA did not publish any separate proposed standard applicable to construction or obtain comments thereon. OSHA also failed to make findings that construction employees were subject to any significant risk of harm due to their alleged exposure and alleged lack of information about hazardous materials, in view of the construction industry's unique work settings and already existing hazard communication requirements.

2. New Provisions Added to the Revised HCS

The Final Rule issued by OSHA on August 24, 1987 was not a mere expansion of the application of the previously existing Hazard Communication Standard which applied to those industries in SIC codes 20-39. In fact, as OSHA stated in the preamble to the Standard, "[t]his final rule is both an expansion and revision of the current HCS." The new Standard contained numerous changes from the pre-existing HCS. These changes were never issued in the form of a proposed rule. Many of the modifications are significant, particularly for the construction industry.

One substantive modification of the previous standard was the addition of § (e)(1), requiring employers to maintain a written hazard communication program for their workplace "at the workplace." Thus, under the new standard, the written program must be maintained at each job-site, a significant difference to an industry in which large numbers of job-sites are routine. The revised standard also included a new provision of § (g)(9) which permits MSDSs to be maintained at a central location at the "primary workplace facility" only if employees "must travel between workplaces during a workshift."

Another substantive change was the addition of § (e)(2). This section requires that employers who produce, use, or store hazardous chemicals at multi-employer worksites must include in their hazard communication programs the methods they will use: 1) to provide or make available MSDSs to the other employers' employees; 2) to inform the other employers of the measures needed to protect employees during "normal operating conditions and foreseeable emergencies"; and 3) to inform other employers of the labeling system in use.

Another addition to the revised standard was § (b)(6)(vii), which exempts "[a]ny consumer product or hazardous substance" only if the employer "can demonstrate it is used in the workplace in the same manner as normal consumer use" and results in exposure not greater in frequency and duration than in consumer use.

Other new provisions were added in the revised standard. Included are § (g)(7), requiring retailers to make MSDSs available to commercial customers only upon request; § (b)(6)(viii), providing an exemption for any drug in a solid final form for direct administration to a patient; and § (f)(2), discussing labeling of steel beams and other solid metal, among others.

3. Paperwork Review of the Revised HCS

The Paperwork Reduction Act, 44 U.S.C. §3504(h), requires that all agencies submit to the Office of Management and Budget (OMB) any proposed information collection requirements prior to finalizing new paperwork burdens on the private sector. OSHA did not submit the revised HCS to OMB for its review prior to publication of the Standard, however. Rather, OSHA only submitted the final revised HCS for OMB review on September 10, 1987. See 52 Fed. Reg. 46075.

On October 23, 1987, OMB disapproved significant aspects of the re-ised HCS, pursuant to OMB's authority under the Paperwork Reduction Act, and suggested reasonable alternatives. See 52 Fed. Reg. 46075. Specifically, OMB disapproved: (1) the new requirement in Section (e)(2)(i) that each employer provide its MSDSs on multi-employer worksites to all other employers on such sites or make them available at the workplace; (2) OSHA's new restriction on the exemption for consumer products in Section (b)(6)(vii), which would require employers to demonstrate use in the same manner and quantities as consumer use. Id.; and (3) the restriction of the exemption for FDA-regulated drugs to only those drugs in solid, final form (Section (b)(6)(vii). OMB also objected to the limited scope of OSHA's "article" exemption (Section (c)), as applied to the non-manufacturing sector, suggesting the need for a "de minimis" cut-off. Finally, OMB disapproved the imposition of the HCS without OSHA's first providing guidelines and other technical assistance to employers to help reduce the cost of compliance.

OMB further conditioned its approval of the remaining information collection requirements of the revised HCS on an agreement by OSHA to conduct a reconsideration of the standard. This was to be done via a rulemaking proceeding to have been initiated by December 1, 1987, and completed by March 1, 1988. OMB also required OSHA to submit, by January 1, 1988, a plan for providing assistance to employers in the form of generic training programs and guidelines.

Contrary to the OMB order, OSHA failed to publish any notice of proposed rulemaking reconsidering the paperwork provisions of the HCS on or before December 1, 1987. OSHA also failed to submit any generic program or guidelines for employers, or plan for the production of such aids to employers, by January 1, 1988. Nevertheless, on April 13, 1988 OMB issued a new order, reaffirming its initial disapproval of portions of the HCS, but allowing the remainder to go into effect based on OSHA's promise to initiate further rulemaking.

53 Fed. Reg. 15033. The present Notice of Proposed Rulemaking was published on August 8, 1988.

On August 19, 1988, a panel of the Third Circuit again granted a motion for further relief in USWA III. The Court held that OMB lacked authority to disapprove the changes to the HCS. A petition for rehearing has been filed, which has not been ruled on by the Court.

4. Recommendations of the Construction Advisory Committee

The Construction Safety Act, 40 U.S.C. §333, and OSHA's own regulations, 29 C.F.R. § 1911.10, require the Secretary to seek the advice of the Advisory Committee on Construction Safety and Health prior to implementing a new safety standard for the construction industry. OSHA did not submit the revised HCS which it ultimately published to the Advisory Committee prior to such publication, however. Rather, in March, 1987, OSHA provided the Advisory Committee with an unpublished draft proposal for a new HCS, which was not ultimately implemented. This draft was discussed at the Committee's June 23, 1987 meeting, and the Committee reacted by recommending that an entirely separate standard for the construction industry be adopted. The Committee reiterated this recommendation on March 14, 1988.

Notwithstanding the Advisory Committee's recommendations, OSHA proceeded to publish the August 8 NPRM without in any way taking into account the unique work practices of the construction industry. The agency "continues to believe that the record substantially justifies the Agency's regulatory choices," and that all of the data submitted to OSHA over the past year "has, by and large, not convinced OSHA that significant changes are warranted . . ." 53 Fed. Reg. 29,825. OSHA claims that the "expectations" of both the manufacturing and non-manufacturing sectors are "settled," and therefore states that it "does not expect the standard to further change significantly unless the Agency is presented with substantial evidence that a regulatory modification is clearly necessary, either because the present standard is demonstrably infeasible in a specific respect, or because the proposed alternative would significantly increase the standard's intended safety and health benefit or significantly improve its cost-effectiveness." Id. at 29,826.

With this background in mind, the Coalition's comments and data in support thereof follow.

II. THE UNIQUE WORKING CONDITIONS OF THE CONSTRUCTION INDUSTRY

Numerous comments in the record have pointed out that the construction industry's work practices and economic circumstances are unique. While some other industries may have one or another of the special factors pertinent to construction, no other industry combines all of these special circumstances. Thus, construction industry employers, unlike most other industries, typically employ workers at multiple job-sites which are constantly changing in scope and location, as are the workers themselves. The employees work side by side with employees of other independent contractors, over whom the employers have little if any control. Construction employees frequently move about within each job-site and also move among job-sites. The employer generally maintains minimal administrative support facilities at each remote location and often has no such facilities on smaller jobs.

At the same time, as OSHA has previously recognized, the nature of construction workers' exposures to hazardous materials differs radically from those in other industries and requires different regulatory treatment. See USWA v. Marshall, 647 F.2d 1189, 1310 (D.C. Cir. 1980) (lead standard). As the Court held in that case, upholding findings by OSHA, "construction work exposes employees to [a hazardous chemical] only for very brief periods, normally requires employees to move constantly from place to place, creating widely varying [chemical] exposure. . .and has an unusually high number of temporary employees." Id. at 1310. The Court also recognized differences in work practices, employee turn-over rates and the prevalence of outdoor workplaces as differentiating construction from other industries. Id.[3/]

Finally, the construction industry, unlike other employers, already has been required to communicate hazard information to employees under previously existing OSHA regulations. 29 C.F.R. §1926.21(b). There has been no record evidence or explanation as to why this pre-existing requirement has been insufficient to address any alleged risk of harm or how the additional burdens imposed by the revised HCS will in any way reduce such alleged risks in the construction industry.

3/ OSHA has also promulgated separate construction industry standards or exemptions with regard to asbestos and air contaminant exposures, among others. See 53 Fed. Reg. 20960 (June 7, 1988).

OSHA must take this unique combination of circumstances into account, as it has in the past, and must tailor any HCS to make sure its provisions are each reasonably necessary and appropriate to the construction industry and that the Standard is feasible. American Textile Mfrs. Inst. v. Donovan, 452 U.S. 490, 536-40 (1981); Industrial Union Dept. AFL-CIO v. American Petroleum Inst., 448 U.S. 607 (1980).

III. THE RISK OF INJURY FROM HAZARDOUS MATERIALS IN THE CONSTRUCTION INDUSTRY

As noted above, construction industry employers have for many years been required to take appropriate measures to reduce the risks arising from exposure to hazardous materials. Specifically, under 29 C.F.R. § 1926.21, construction industry employers are required, inter alia, to "instruct each employee on the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury." In addition, construction workers are protected by numerous other safety standards, relating to chemical exposure, including, inter alia, 29 C.F.R. § 1926.55 (limiting exposure to gases, vapors, fumes, dusts and mists), 1926.57 (imposing ventilation and exhaust requirements), 1926.103 (requiring appropriate respiratory equipment), and 1926.354(c) (requiring protection against toxic preservative coatings).

Numerous comments in the record of this proceeding establish that these measures have been successful in reducing the number of injuries resulting from hazardous chemicals in the construction industry to insignificant amounts. See, e.g., Comments of National Association of Home Builders dated February 25, 1986; see also Comments of Associated General Contractors dated February 24, 1986, pointing out the differences between the chemical exposures likely to occur in a fixed workplace environment versus the much less concentrated and less extended exposures likely to occur in construction.

Indeed, the Department of Labor's own statistics belie the contention that construction workers face "significant risks" from hazardous chemicals on the job-site. According to the 1986 edition of Occupational Injuries and Illnesses in the United States by Industry (published by the Bureau of Labor Statistics), less than one persenct of all "injuries and illnesses" fall into the "illness" category, and not all of these were chemical-related. The same study reveals that nearly half of the occupational illnesses were relatively minor skin problems (Table 8, page 50 of the above referenced

report). There is also no evidence that any of these illnesses were caused by any lack of information available to the affected employees.4/

Other data submitted to OSHA by the National Construction Safety Executives indicated a chemical related incident rate of only 0.21. See Docket H-022D, Ex.L-5-117. The Associated General Contractors has recently reported an incident rate of 0.24, based on a survey of its 32,000 members who reported only 114 chemical-related injuries in 93.2 million manhours. See Statement by AGC to Small Business Subcommittee, U.S. House of Representatives, September 28, 1988. Once again, even these low figures must be discounted further because there is no evidence that the reported injuries occurred as a result of any lack of information among the employees about hazardous chemicals.

In the NPRM, OSHA claims that the construction industry's position on the low risks from hazardous chemicals is somehow undercut by other construction industry estimates of the relatively large numbers of hazardous chemicals on particular sites. 53 Fed. Reg. 29,827. OSHA appears to be confusing the distinction between the types of exposures possible in the construction workplace and the existing measures which prevent minimal exposures from causing significant harm to employees. Under the current rule, with its extremely broad definition of "hazardous chemical," virtually any substance which exists on a construction site is covered, and minor hazards such as toilet bowl cleaners are regulated in the same way as major hazards such as compressed gases and concentrated acids.

4/ A 1977 BLS report cited in the 1983 HCS rulemaking reported that the chemical source incident rate was only .17% (1.7 out of 1000), not a significant risk. Even that ratio is suspect because of the age of the report and its speculative nature. Certain studies cited by the AFL-CIO which purport to show an increased incidence of illnesses among construction workers are even more dated and speculative, relying on statistics accumulated prior to passage of the Occupational Safety and Health Act. Again, none of the chemical injury data presently before OSHA shows how many injuries or illnesses were caused by any lack of information on the part of the employee.

The mere existence of a potentially hazardous chemical on a worksite does not establish a significant risk to employees. Rather, the types of exposure, concentration of the hazard, and alternative safeguards must also be considered. Thus, the fact that large numbers of chemicals are present in the construction industry which would be covered by the HCS does not in any way establish that there are concomitant significant risks to workers presented by these chemicals.

IV. INFEASIBILITY OF THE REVISED HCS

In addition to pointing out the absence of demonstrable need for the provisions of the HCS in order to reduce significant risks, construction industry representatives have repeatedly expressed concern to OSHA about the infeasibility of the revised HCS in the construction industry. As is further addressed below with regard to specific provisions, the Standard is both technologically and economically infeasible. Numerous comments have shown that the industry's unique work practices cannot be conformed to the requirements of the HCS and that the costs of compliance cannot be sustained without threatening the viability of significant portions of the industry.

In response to the industry's challenges, OSHA has relied almost exclusively on an economic study performed in June 1987 by JACA Corporation. The JACA analysis is replete with errors and greatly underestimates the real cost of compliance. With respect to first-year costs alone, JACA makes the following errors:

1. JACA uses the number of chemical hazards instead of the number of products containing mixtures of hazardous chemicals to develop costs of a) the written program, b) employee information and training, and c) maintenance of MSDSs. This greatly underestimates costs, since contractors and subcontractors must protect their workers from an average of more than 300 products containing assorted hazardous chemicals instead of the 9 to 12 chemical hazards JACA uses in its cost estimates.

2. JACA does not consider the interaction between contractors and subcontractors. According to JACA, the average contractor (SIC 15) must obtain, file and list only 9 MSDSs and the average subcontractor (SIC 17), 12. Even if these figures were correct, which they are not,

the JACA study does not take into account that the contractor must obtain the average 12 MSDSs from 20 or more subcontractors, a total of 240, plus his own 9. This indicates a lack of awareness of the multi-employer worksite.

3. Similarly, JACA does not take into account that the average subcontractor can serve ten to thirty contractors each year, and must supply each one with a pack of anywhere from 12 to 50 MSDSs, in different combinations for each job.

4. JACA does not consider the number of times a contractor or subcontractor may change brands of products during a year. Products go on sale from time to time, and prudent contractors and subcontractors shop for the best value at a particular time. This can double or triple the number of products containing hazardous chemicals which he uses, with resultant increases in written program costs (reading and evaluating MSDSs), training (new products an employee must be informed of), and MSDS maintenance (filing and reading MSDSs by employees).

5. JACA includes no cost for employees to read MSDSs. If the Hazard Communication Standard has any purpose, each employee and subcontractor employee will actually read MSDSs, perhaps two per year. This is a very significant cost given an average of 10 employees plus perhaps 60 subcontractor employees, each requiring one manhour to go to the job trailer during working hours (when a clerk is present to open the file drawer, go through 300+ MSDSs to find the right one, and perhaps photocopy it for the employee), read 2 to 17 pages of scientific information, and return to work. Since the employee is reading MSDSs on company time, the cost must be included.

6. No employee overhead (meaning charges for insurance, workers comp coverage, paid vacation benefits, etc.) is included in JACA's hourly rates. Employee overhead usually ranges from 25 to 30 percent of wages in the construction industry.

7. JACA assumes that the complexity of writing a hazard communication program is not directly related to the number of chemical hazards (represented by the number of MSDSs). "Specifically, it has been assumed that establishments having 10 times as many chemical hazards (sic) as the average firm will incur twice the written program costs of the average firm, all other factors being equal." JACA uses an exponent to bring the cost of programs with high or low numbers of hazards closer to the cost of writing an average program. This is not valid. Preparation of a hazard communication program involves obtaining and evaluating MSDSs, and these factors are directly related to the number of MSDSs. This mistake incorrectly reduces this cost to one-fifth of what it should be. If the average program costs $1000 to write, the cost to an employer with ten times the average number of MSDSs will be nearly $10,000, not the $2000 that JACA's exponent leads them to estimate.

8. JACA arbitrarily deducts from the estimated costs of compliance certain costs allegedly associated with complying with existing state right-to-know laws. This deduction ignores the fact that only 12 states currently apply their hazard communication laws to construction industry employers. Of those 12, none approaches OSHA's HCS in scope with regard to construction, so that no employers have had to incur the costs of compliance with such a rigorous and impractical rule.

Other major defects make JACA's long-term estimates far worse than their first-year estimates:

1. JACA's "Growthchem" estimate for growth in the number of hazardous chemicals and resultant MSDSs does not consider product turnover as contractors and subcontractors change brands. This factor is magnified as years pass.

2. JACA considers growth in establishments and employee turnover within the contracting or subcontracting firm but does not consider subcontractor turnover. When one subcontractor is busy, the contractor will select another one.

Over the years, as subcontractors come and go, change their business, or discontinue business, contractors will change subs. The employees of the new subcontractors will have to be trained in the hazardous chemical products being used by the employer and all the other subcontractors with whom they will be working.

3. JACA fails to adequately factor in the effects of employee turnover on training costs and ignores OSHA's requirement that employers receive new training every time a new hazard enters their work area.

Correction of JACA's defective analysis results in substantially higher cost estimates. The tables that follow provide more realistic, albeit still understated, estimates of the expected compliance costs to small general contractors. We have used as our example a general contractor in SIC Code 15 employing 10 employees, a representative number. See 1983 County Business Patterns, Dept. of Commerce Census Bureau. This size firm would typically utilize about 20 subcontractors.

We are providing herewith a list of MSDSs obtained from an actual home building firm, as support for our estimate that the minimum number of MSDSs which the typical contractor must deal with is around 300, not 9 as estimated by JACA. See Attachment 1. Since product manufacturers are tending to produce MSDSs on every product, because of their own difficulty in identifying which products are truly hazardous, the actual number of MSDSs sent to each construction employer will probably be higher than 300. A large retail hardware chain has submitted nearly 2,500 MSDSs to NAHB as evidence of the potentially covered substances in the construction industry.

Many other assumptions made in the following analysis may greatly underestimate the actual costs. The analysis assumes that training on hazardous chemicals, effects, precautions, and first aid can be primarily generic, utilizing "canned" videotape programs, and that only a few specific products will be covered in training. If OSHA requires employers to provide such training on all specific products, training costs may be ten times as great as those estimated below. The attached analysis also ignores, as does JACA, the HCS requirement that training must be repeated every time a new hazard enters an employee's work area. The true costs of such training would be exponentially greater but are also technologically infeasible.

Our analysis also makes the assumption that the employer is capable of identifying what few products are really hazardous and should be given special emphasis. This is probably an unrealistic assumption since the employer is not a chemist and does not have the funds to hire a chemist and industrial hygienist to 1) identify which chemicals are really hazardous, and 2) perform the jobsite research on these to determine actual exposure levels. Performing these tasks would be prohibitively expensive, especially for small businesses.

The estimates also make the assumption that subcontractor employees will be trained only once a year. In fact, if a builder changes subcontractors or if the employer or any of his subcontractors change the products they use, OSHA may require that employees and subcontractor employees be trained several times a year, perhaps tripling the training cost estimates given below.

A further note regarding the tables: "MH" means manhours. Manhours are multiplied by the employee's or subcontractor employee's wage rate including 25 per cent labor overhead.

Hazard C[illegible]ication Program First-Year Costs

5 - General Contractor
10 employees, 20 subs

	Professional			Clerical			Foreman - two			Labor(Six)			Misc Cost		Total
	MH	Rate	Total	MH	Rate	Total	MH	Rate	Total	MH	Rate	Total	Item	Total	Cost
A. Written Hazcom Programs								$22			$13				
1. Call trade assns:, local. ntl.	2	$32	$ 64										Phone	$ 3	$ 67
2. Order Hazcom manual	0.25	$32	$ 8	0.5	$10	$ 5									$ 13
3. Read, study manual	8	$32	$ 256												$ 256
4. Meeting with staff	1	$32	$ 32	1	$10	$ 10	2	$22	$ 44						$ 86
5. Obtain MSDSs: letter to subs	2	$32	$ 64	8	$10	$ 80							Copies, ca.	$ 10	$ 154
6. Obtain MSDSs: follow-up calls	10	$32	$ 320	20	$10	$ 200							Sub labor	$ 660	$ 1180
7. Obtain MSDSs: from suppliers	4	$32	$ 128	8	$10	$ 80	8	$22	$176				Letters, etc.	$ 10	$ 394
8. Read & evaluate 300 MSDSs	32	$32	$1024										Sub labor	$ 102	$ 1126
9. Prepare MSDS list	16	$32	$ 512	16	$10	$ 160							Sub lists	$ 120	$ 792
10. Prepare and revise plan	16	$32	$ 512	8	$10	$ 80	3	$22	$ 66				Sub plans	$ 100	$ 758
11. Review plan with staff	3	$32	$ 96	3	$10	$ 30							Sub review	$ 64	$ 190
12. Inform subs of plan: letter	3	$32	$ 96	1	$10	$ 10							Copies, stam	$ 10	$ 116
13. Inform subs: 20 15-min calls	5	$32	$ 160										Sub dist.	$ 64	$ 224
14. Program maintenance (new MSDSs)	30	$32	$ 960	60	$10	$ 600							Sub maint.	$ 370	$ 1930
Written Program Totals	132.25	$32	$4232	125.5	$10	$1255	13	$22	$286			$ 0		$1513	$ 7286
B. Employee Information & Training															
1. Order Hazcom training video	0.25	$32	$ 8	0.5	$10	$ 5							Video	$ 350	$ 363
2. Develop training program	2	$32	$ 64	1	$10	$ 10							Sub programs	$ 148	$ 222
3. Meeting of staff	4	$32	$ 128	4	$10	$ 40	8	$22	$176				Sub mtgs	$ 352	$ 696
4. Train employees	0.25	$32	$ 8	0.25	$10	$ 2.5	.5	$22	$ 11	$ 6	$13	$ 78			$ 99.5
5. Schedule subs, employees	1	$32	$ 32	32	$10	$ 320							Sub sched	$ 780	$ 1132
6. Traing subs employees (60)	20	$32	$ 640										60wh x $13	$ 780	$ 1420
7. Retraining/new hire training	20	$32	$ 640							$ 4	$13	$ 52	Sub retraining	$ 780	$ 1472
Employee Training Totals	47.5	$32	$1520	37.7	$10	$ 377	8.5	$22	$187	$10	$13	$130		$3190	$ 5404.5
C. Maintenance of MSDSs															
1. Cost to maintain 300 MSDSs at $1.25 each														$ 375	$ 375
Read 2 MSDSs/year (1 wh each)															$ 328
2. Employees	2	$32	$ 64	2	$10	$ 20	4	$22	$ 88	$12	$13	$156	Sub Labor	$1560	$ 1560
3. Sup. employees (60x13x2mn)													Copy 70 pp	$ 14	244
4. Clerical assistance (10 min)x(10 people)x(2sheets)				23	$10	$ 230									
MSDS Maintenance Totals	2		$ 64	25		$ 250	4		$ 88	$12		$156		$1949	$ 2507
TOTAL COSTS - GENERAL CONTRACTOR FIRST YEAR	181.75	$32	$5816	188.25	$10	$1882.5	25.5	$22	$561	$22	$13	$286		$6652	$15197.5

COMPARISONS OF INDUSTRY AND JACA ESTIMATES (FIRST YEAR)

PROVISION	INDUSTRY ESTIMATES		JACA PER ESTABL'T
Written Program	$ 7286		$ 46
Info. & Training	$ 5404		$ 74
MSDS Maintenance	$ 2507		$ 26
	$15197	vs.	$146

The estimated cost of first-year compliance by this conservative analysis is 100 times the OSHA estimate. Still higher figures have been submitted to OSHA in previous comments filed by individual industry members. It is likely that such higher estimates will prove to be more realistic, for the reasons stated above. In addition, the assumptions made in our analysis do not resolve questions of technical infeasibility caused by the construction industry's unique work practices. Finally, additional substantial costs not considered by JACA, will accrue in every subsequent year of compliance with the HCS, as jobs, employees and hazards continually change.

These estimated costs of compliance, when viewed in the context of the small size of the majority of construction industry employers, clearly threaten the viability of a substantial segment of the industry. The most recent census figures indicate that 89% of construction industry employers had annual business receipts of less than $1 million dollars.5/ The average rate of return in the industry, according to data compiled by NAHB, is 5%, or, for the majority of employers, less than $50,000. Thus, the cost of compliance with the HCS threatens to wipe out the profit of the small businesses who presently comprise the bulk of the industry.

Nor has OSHA yet explained how the HCS can be feasibly implemented from a technological standpoint in the construction industry. In this regard, we have previously pointed out that the revised HCS imposes obligations on builders which are utterly inconsistent with existing work practices. Nor can work practices be developed which will enable the industry to comply with the Standard as currently drafted.

The most pressing technological problems include the inability of contractors to predict and properly inventory at

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5/ 1982 Census of Construction Industries, U.S. Dept. of Commerce, Bureau of the Census.

the start of a multi-employer job all of the hazards covered by the HCS with which its employees may come in contact. The contractors are required to maintain hazard-specific programs at each site, yet the identity of other subcontractors, let alone their accompanying hazards, may not even be known at any given time.

Similarly, OSHA has still failed to explain how buildings can be built if new training must be provided to each employee every time the employee confronts a new hazard in his or her work area. No such retraining has previously been required in construction, and such a system is completely unworkable. Employees move about all over a construction job site and the nature of the work and existing hazards constantly changes.

OSHA has thus far ignored this compelling evidence of both economic and technological infeasibility. The result is a rule which threatens the viability of small construction companies, who presently comprise a majority of the industry.

V. COMMENTS ON SPECIFIC PROVISIONS OF THE REVISED HCS AND SUGGESTION OF REGULATORY ALTERNATIVES

A. Problems Created by the Requirements that Written Programs and MSDSs Be Maintained "At the Workplace"

As previously noted, the revised HCS for the first time requires that the written hazard communication program be maintained at the workplace, rather than at a centralized location. This new requirement is particularly onerous for the construction industry, particularly when combined with the requirement that contractors maintain decentralized MSDSs and inventory each job site's hazards for inclusion in the program. The result is that construction contractors must prepare multiple programs tailored to each of their many different jobs and must identify, copy and transport hundreds of MSDSs to remote locations.

Aside from the question of whether it will be technologically possible for contractors to correctly identify all the potential hazards at their individual jobsites, the new requirement is simply unnecessary to increase worker safety. As is discussed in detail below, at pp. 23-28, product labels can provide all information immediately needed by employees to protect themselves at the job site. In many instances the labels provide better information than the MSDSs because they use plain English and avoid information overload. Whatever additional information is needed from MSDSs can be obtained

when necessary from a central office location. No need exists to have these complicated and bulky documents at small and remote job sites, where many contractors currently provide no administrative support.

Moreover, the size of the worksite itself may pose special problems, especially in heavy utility and transportation construction projects. On large worksites such as highway projects, maintaining employee access to a jobsite HCS file is difficult due to long distances. In cramped downtown areas, tight working conditions for excavation of underground water and sewer projects place available space at a premium.

We therefore urge OSHA to modify Sections (e)(1), (g)(8) and (g)(9) to delete the requirement that written programs be maintained "at the workplace" and to clarify that MSDSs may be kept at centralized office locations.

B. Problems Associated with the Multi-employer Worksite Provisions

As we have repeatedly pointed out to OSHA, among the most onerous and least necessary provisions of the revised HCS are the multi-employer worksite provisions in subsection (e)(2). The August 1987 revision to the HCS requires that all written hazard communication programs include the method employers will use to: (a) provide other on-site employers with MSDSs, or to deposit MSDSs at a central location on the site; (b) inform them of any precautionary measures that need to be taken to protect their employees; and (c) inform them of the labeling systems in use in the workplace. The language of this provision is somewhat vague, but it could easily be read as requiring that work come to a complete halt each time a new contractor arrives on the job, and that a "hazard information meeting" be held before work could resume.[6] The OSHA NPRM focuses in isolation on the issue of whether central deposits

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6/ One of the principal problems with the rule is that it provides little guidance as to exactly what constitutes compliance with subsection (e)(2). In the rule's preamble, OSHA states that, "the provisions do not specify how this coordination is to be accomplished," and that "[t]his is best left to the discretion of the parties involved." OSHA does, however, speculate that, "In many cases, it would probably be most efficient for the general contractor to coordinate the function." We reiterate a question we have often posed to OSHA: If OSHA's own highly-trained health standards staff cannot articulate how hazard information is to be exchanged on multi-employer sites, how can a builder or small contractor be expected to come up with a system which will satisfy an often fickle OSHA inspection force?

of MSDSs are permitted, without addressing in any way the industry's concerns over the additional information exchanges which the HCS appears to require.

OSHA's approach, disapproved by OMB, fails to recognize certain basic realities of the construction industry. These include the sheer number of contractors on many sites; the number of covered substances in use on the site, albeit frequently in minor quantities; the fact that contractors come and go at random times during the construction process; and the fact that often times, the general contractor is not even present when work is in progress.

As noted above, a large building site may have dozens of contractors, and hundreds of employees, coming and going during the course of a workday. An informal telephone survey recently conducted by the Association of the Wall and Ceiling Industries, International, revealed the following examples:

Project/Location	Height/Area	No. Subs	Peak Employees
190 S. LaSalle Chicago	41 floors 985,000 sf	60	300
Hyatt Grand Regency Washington, D.C.	17 floors 873,800 sf	32	500
FMC Corp. Minneapolis	6 floors	30	120

In contrast to OSHA's multi-employer worksite provision, we believe there are far simpler ways of making hazard information available to employees, even where these hazards come from a variety of sources. The most obvious method would be to simply examine the interrelationship between the various elements of hazard communication under the OSHA rule: MSDSs, container labels, and employee training. A properly prepared MSDS contains more information on a particular chemical than any employee would ever want to know, or could ever understand. The MSDSs are supplied by the supplier of the building product in question, and all the employer should have to do is make his employees aware that these documents are available. This can be done during the employee's initial training (which should only have to be carried out once, by the employee's employer), and through product labels, which will also be provided by the contractor's suppliers.

As is discussed in detail below, at pp. 23-28, labels are more useful for most employees, as they tend to be more understandable than MSDSs. With this system already in place, it is only necessary to require that the actual MSDS be made available, at the request of an employee, either on or off the site, by the contractor who brings the substance onto the site. Put another way, the emphasis of the HCS on multi-employer worksites should be shifted from primary reliance on MSDS availability, as OMB has held, to a meaningful labeling program and generic hazard training program, while maintaining a reasonable availability of MSDSs for more complete employee information.

It should not be necessary to require "hazard communication breaks" during the workday, and the HCS should be modified so as to avoid such disruption. Nor is it necessary to create "MSDS drops" on job-sites. Our suggested approach is workable, and would be entirely consistent with the OMB's October 28, 1987 directive, which specifically rejected the requirement that MSDSs be brought on-site at multi-employer jobs.

In light of these considerations, we propose the following modification to subsection (e)(2) of the HCS:

> Multi-employer workplaces. Employers who produce, use, or store hazardous chemicals at a workplace in such a way that the employees of another employer may be exposed (for example, employees of a contractor working on-site) shall ensure that copies of material safety data sheets are available to all exposed Employees at the Employer's offices.

OSHA should make clear in the preamble that this "availability" requirement can be satisfied by simply requiring contractors and subcontractors to have their MSDSs available at local offices where they can be obtained on short notice. Further information exchanges and "coordination" among multiple, transient contractors and employees should not be required. The important point is that ours is a "regulatory alternative" which even small contractors can comply with, and yet does not reduce the amount of worker protection afforded by the HCS as a whole.

C. Consumer Products

1. Background

In Subsection (b)(6)(vii) of the HCS, OSHA creates an exemption for products covered by the Consumer Product Safety Act and/or the Federal Hazardous Substances Act. This

exemption only applies "where the employer can demonstrate it is used in the workplace in the same manner as normal consumer use, and which use results in a duration and frequency of exposure which is not greater than exposures experienced by consumers." However, the utility of the exemption is questionable since it is difficult, if not impossible, for a builder or other small business to determine with any precision how the "duration and frequency of exposure" in his workplace compares with that experienced by consumers. To make these determinations with any degree of confidence would require extensive and complex research.

An alternative approach, which makes the entire concept more meaningful, would be to change the wording of this exemption and adopt the approach taken by section 311(e)(3) of the Superfund Amendments and Reauthorization Act of 1986 (commonly known as "SARA"). SARA exempts "any substance to the extent that it is used for personal, family, or household purposes, or is present [in the workplace] in the same form and concentration as a product packaged for distribution and use by the general public." The SARA exemption reflects a Congressional understanding that common consumer products, and their attendant hazards, are generally common knowledge and should not be the source of additional regulatory burdens. The SARA exemption is carefully circumscribed, however, in that the "form" (i.e., packaging), and "concentration" of the product as used in the workplace must be the same as when used in the household. Supplies which come in "industrial strengths" or "industrial sized packages" would not fall within the exemption.

OMB's October 1987 decision specifically rejected all information collection requirements for any consumer products which are exempt from coverage under SARA. The NPRM invites comment on OMB's position, as well as several other issues in this area, but it proposes no changes in the existing "consumer products" exemption. In support of its position, OSHA states that "the mode of distribution of a product (i.e., retail distribution rather than wholesale) is not a criterion that is related to employee exposure or the need for information and therefore is not relevant to whether consumer products should be covered by this rule." 53 Fed. Reg. at 29,838.

We agree with OSHA that the issue is not "retail versus wholesale." The issue is making relevant and understandable information available to workers without creating unnecessary regulatory burdens. In this context, there is ample evidence that existing consumer products labels provide workers as well as consumers with necessary hazard information, and that they are read by users. The cost of

adding more label information and MSDS requirements to existing CPSC labeling is unlikely to result in any additional protection in the workplace.

2. The Effectiveness of Labeling Under the CPSA and FHSA

The Consumer Product Safety Act empowers the Consumer Product Safety Commission to promulgate consumer product safety standards that are reasonably necessary to prevent or reduce an unreasonable risk of injury associated with a product. 15 U.S.C. §2056 (1982). The standards include performance criteria, requirements that a product be marked with or accompanied by clear and adequate warnings or instructions, and standards respecting the form of warnings or instructions. 16 C.F.R. §1500.121 (1988).

The Federal Hazardous Substances Act, 15 U.S.C. 1261 (1983), empowers the CPSC to promulgate safety standards for substances that by definition are determined to be hazardous substances under the Act. The CPSC has established testing procedures to determine if a substance is within the jurisdiction of the Act. Manufacturers are expected to test their own products and ensure compliance with applicable labeling and packaging requirements. See 16 C.F.R. §§1500.40-1500.46 (1988).

In promulgating criteria for consumer product labeling, the CPSC has focused on the prominence, placement, and conspicuousness of cautionary statements that the Commission requires on warning labels. The cautionary statements include: signal words; affirmative statements of the principal hazards associated with the substance; the common name or chemical name of the substance; the name and place of the business of the manufacturer, packer, distributor, or seller; statements of precautionary measures to follow; and instructions for special handling and storage when appropriate. See 16 C.F.R. §1500.121(a). Under the FHSA, the CPSC has also issued labeling requirements for specific products, including: self-pressurized containers; ethylene glycol-base antifreeze; and contact adhesives. See 16 C.F.R. §1500.130, et seq.

CPSC reports and private studies clearly indicate that consumers are aware of and read their labels. For example, a study conducted by John A. Miller of the University of Colorado for the National Bureau of Standards in 1978 cited evidence that 69 percent of respondents to a survey of Philadelphia consumers said they look for nutritional information on food packages, and 63 percent of respondents felt it was important

or extremely important to have this information available.[7] This demonstrated concern for product ingredients and awareness of the information available to consumers on packaging lend strong support to the contention that consumers are aware of and read consumer product labels.

The CPSC has consistently demonstrated that it can respond quickly and effectively to perceived risks to consumers through its rulemaking and labeling requirements. In 1987, for example, the Commission adopted additional labeling requirements for methylene chloride, a suspected carcinogen that is found in many products, including paint strippers, adhesive removers, and spray shoe polish.[8] The CPSC responded to data indicating that the chemical was carcinogenic by alerting consumers with signal words such as "warning," and the product's primary hazard such as "vapor harmful," which is placed on the front panel of products, while providing detailed instructions for safe use and proper ventilation on the back panel.

Information from other federal agencies also supports the view that consumers read labels. The Division of Consumer Studies, Bureau of Foods, at the Food and Drug Administration conducted a nationwide study on the impact of saccharin warnings on sales of diet soft drinks in 1980.[9] The study points to both the need for clear, easy to understand and readily available warnings and the importance that warning labels have played in affecting sales and thereby encouraging manufacturers to develop safer products. Additional measures will do little more than water down existing warnings, reducing their impact on users, while providing little added incentive for manufacturers to develop safer products.

7/ J.A. Miller, Labeling - The State of the Art, p. 36 (1978) (for the Marketing Science Institute, National Bureau of Standards Contract No. 7-35832.).

8/ Chemical Marketing Reporter, "CPSC Sets Policy on Methylene Chloride," September 21, 1987 at 9 col.3.

9/ Division of Consumer Studies, Bureau of Foods, Food and Drug Administration, "Impact of the Saccharin Warning on Sales of Diet Soft Drinks in Grocery Stores," Jan. 1980.

3. The Problem of Information Overload

The HCS's "three-phased" approach to hazard communication poses a clear risk of information overload. Government reports and academic research clearly acknowledge the importance of avoiding information overload in programs intending to inform individuals. In a leading study conducted by Jacob Jacoby, Donald E. Speller, and Carol Kohn Berning and funded in part by the Consumer Research Institute, Inc., researchers concluded that increases in information load can make processing more time consuming and can also cause consumers to pay less attention to relevant information. The researchers summarized earlier studies on information overload by stating, "Based upon considerable evidence, this position maintains that there are finite limits to the ability of human beings to assimilate and process information during any given unit of time and that once these limits are surpassed, behavior tends to be confused and dysfunctional."10/

A report issued by the Treasury Department and Health and Human Services Department entitled "Health Hazards Associated with Alcohol and Methods to Inform the General Public of these Hazards" cited communications experts who noted that the public is generally feeling "over warned." Experts were quoted in the report as stating "that growing segments of the public ignore more and more of such [government] warnings because they feel they cannot heed the recent avalanche of warnings."11/ This reaction is heightened when there are no comparable or substitute products available.

10/ J. Jacoby, D. Speller, C. Berning "Brand Choice Behavior as a Function of Information Load: Replication and Extension," Journal of Consumer Research, Vol. 1 June 1974.

11/ U.S. Department of the Treasury and U.S. Department of Health and Human Services, "Health Hazards Associated with Alcohol and Methods to Inform the General Public of these Hazards," p.35 (1980). See also N. Malhotrn, "Information Load and Consumer Decisionmaking," Journal of Consumer Research, Vol. 8 (Mar. 1982).

The report also noted that warning label effectiveness is significantly affected by its presentation. Messages tending to instill a high degree of fear were found to be not as effective as more positive approaches that suggest alternative action. A high level of fear was determined to cause audiences to feel overly threatened and, as a result, to screen out the message. Moreover, the report noted that if the content of a warning message strongly contradicts the personal experience of those to whom the message is directed, the warning will likely lose its credibility.

These studies on the issue of "information overload" underscore the importance of information impact over the more manageable and politically convenient issue of information provision. The CPSC has painstakingly developed clear, succinct signal words such as "DANGER," "WARNING," "CAUTION," to be accompanied with a statement of the principal hazard, such as "HARMFUL OR FATAL IF SWALLOWED" or "FLAMMABLE." The CPSC requires that the warnings be placed prominently on the labels of products, and that the type and coloring contrast with the packaging in order to effectively capture the user's attention.

Regrettably, OSHA's current rule requiring MSDSs in addition to existing or enhanced product labels, ignores proven methods of product warning. OSHA's requirements under the HCS program take a step backward from established and proven methods of warning the users of consumer products. OSHA relies on voluminous sheets that document production, shipment, molecular weight, physical characteristics and the like, with specific warnings lost to all but the most attentive users. Moreover, these sheets are not attached to the products for ready reference, but are instead held presumably in one location, requiring a user seeking information to leave his tasks at hand and discipline himself to locate and read the information. Rather than employ clear, easy to understand signal words, warnings and instructions, the MSDS provides lengthy and confusing details of a product, much of it unrelated to a worker's use of the product and/or his safety. The fact that workers will be asked not only to review dozens of MSDSs related to common household products, but will also be provided with specific information on unique industrial chemical hazards significantly increases the likelihood that all warnings will be ignored or that the dangers surrounding the use of truly industrial products will not be adequately communicated.

In our view, OSHA is doing a disservice to workers by taking a "more information is better" approach to warning users of ordinary consumer products. The CPSC has demonstrated its ability to protect users of consumer products from potential hazards associated with their use. If a particular product poses a particular hazard through more frequent use, the CPSC has the ability and jurisdiction to warn all users, from homemakers to construction workers to do-it-yourself handymen of hazards associated with the product. Labels would effectively warn all users, not simply selected classes. At the same time workers would still have the right and opportunity to avail themselves of more specific information on truly industrial hazards not customarily used by ordinary customers.

D. Information Comparisons Between Consumer Product Labels and MSDSs

Each of the problems under the HCS discussed so far, i.e., maintaining written materials at the worksite, handling multi-employer exchanges of MSDSs, and the consumer products exemption, hinges on OSHA's overreliance on the need for instant accessibility to MSDSs, as opposed to product labels. We believe OSHA must reconsider the overall utility of its MSDS requirements and the extent to which product labels are more appropriate to satisfy the safety needs of employees in the construction industry, at least with respect to the above referenced issues.

A study recently conducted by the NAHB Technology and Codes Department lends further support to the redundancies between consumer product labels and MSDS. An assortment of 20 products commonly used on construction sites was selected and the hazard information on the labels was compared with the information available on the corresponding MSDS. The labels and MSDSs used in the study are attached hereto as Attachment 2. The results of this study can be summarized as follows:

1. **Signals**: The labels are far superior to the MSDSs in provision of signals to alert employees to hazards: DANGER, WARNING, CAUTION, POISON, CAUSTIC POISON. The CPSC regulations require that these warnings be on the front and back of containers, be placed in bold capitals in clear contrast to the background. In comparison, warnings in MSDSs are lost in the small print and extraneous information.

2. **Warnings:** The labels are far superior to the MSDSs in providing distinct warnings such as "Harmful or Fatal If Swallowed," "Vapor Harmful," "Flammable," "Highly Flammable," "Combustible," "Highly Toxic," "Skin-Eye Irritant," "Content Under Pressure." Again, these warnings are in bold print to attract the reader's attention. The MSDS warnings are not easily noticed.

3. **DOT Shipping Information:** This information appears on three MSDSs and on no labels. This information is not useful in protecting construction employees.

4. **Fire/Explosion:** All MSDSs and labels carry information on flammability/combustibility. Twelve MSDSs (and no labels) contained the flash point of the product, which is, information of doubtful usefulness to employees. Fifteen MSDSs describe the type of fire extinguisher to be used; in all cases, dry chemical or foam can be used, and in most cases, CO_2. In other words, any kind will do. One MSDS prescribes, "For small fires: Use dry chemical, CO_2, water or foam extinguishers [any type will do]. For large fires: Evacuate area and call Fire Department immediately."

5. **Hazardous Chemicals:** Six labels do not contain listings of "hazardous" chemicals; however, in most cases the MSDS chemicals listed are low risk, high PEL (permissible exposure levels), with relatively trivial adverse health effects. On some MSDSs, no hazardous chemicals are listed because the chemical formulations are trade secrets. The employee, who is supposed to have access to MSDS information in an emergency, has to write to the manufacturer to obtain information on the chemicals. The employer, who is supposed to use this information to prepare his training program, does not have access to such trade secrets.

6. **PELs and TLVs:** Nearly all MSDSs provide PELs or TLVs (Threshold Limit Values); none of the labels do. Neither employees nor employers are trained chemists. Since they are incapable of quantifying job-site exposures, PELs and TLVs are useless to them.

7. **Physical Data:** Nearly all MSDSs contain physical data (boiling point, vapor pressure and density, solubility in water, appearance and odor, specific gravity, percent volatile by volume, etc.), whereas the labels do not. This data, however, provides no information on precautions, effects, or first aid, and as such is of no value to employees and employers. The data serve only to "bury" important information.

8. **Emergency Telephone Numbers:** Each MSDS has an emergency telephone number. Only 3 labels have telephone numbers.

9. **Health Hazard Data (Effects):** In about eight cases the MSDS supplies more information on the effects of hazardous chemicals from inhalation, ingestion, or contact with skin and eyes. In several cases the label is superior. In nearly all cases in which the MSDS provides more information, the effects are minor -- irritation of eyes and skin. Two labels clearly lack important information. One MSDS is missing two pages (page four is on the back of page one, pages two and three are missing). The necessary conclusion from this data is that, in general, labels supply equal and adequate information on the effects of hazardous chemicals.

10. **First Aid:** In six to eight cases, the MSDSs provided more information on first aid than the labels did, although in nearly all cases the first aid prescribed is obvious. When bothered by fumes, move to fresh air. If eyes become irritated, flush with water. If skin becomes irritated, wash it. Several state, "If not breathing, give artificial respiration." However, once again, in nearly all cases, the labels supply equal and adequate first aid treatment information.

In contrast, OSHA does not require first aid information to be included on labels prepared by the employer. The employee is expected to go to the file drawer in the construction trailer to obtain this information. OSHA admits that too much information on labels reduces readership ("the more detail there is on a label, the less likely it is that employees will read and act on the information"), but for some reason feels differently about MSDSs.

11. **Reactivity Data:** In all cases the MSDSs supply this data and the labels do not. In all cases the chemicals are listed as "stable." This is useless information for employees and employers.

12. **Precautions:** In three cases, the MSDSs supply more precautions than the labels, and in two cases the labels supply more. In sixteen cases, MSDSs prescribed wearing goggles, gloves, or protective aprons or clothing, and the labels do not. In each case, however, these precautions may not be necessary, depending on whether the employee uses reasonable care. The labels and MSDSs are usually consistent in requiring NIOSH-approved respirators for certain occupational exposures to hazardous products.

13. **Handling and Storage:** The MSDSs provide more, albeit obvious, information in seven cases. The usual requirement for most flammable items is obvious--store in a cool, well-ventilated place, away from flames.

14. **Spill or Leak Procedures:** The MSDSs provide somewhat more information in five cases. For most, the requirements are again obvious. For flammable items, extinguish flames and ventilate the area; then "scrape together," "soak up," "scoop up," or "absorb." In other words, "clean up."

15. **Waste Disposal:** Nineteen MSDSs provide waste disposal advice which is nearly always, "Obey the law" by following local regulations. One suggests use of "normal methods" of waste disposal. Only three offer possibly useful information requiring incineration instead of landfilling. It should be pointed out that waste disposal for builders is not a major task; it normally involves disposal of empty containers. Therefore, this category is not very useful to employers or to employees.

16. **Read the Label:** Four MSDSs cautioned the reader to "read the product label." This should be the rule. It should also be noted that several of the labels which were inferior to the MSDSs did not comply with CPSC labeling requirements, and it can be assumed that their deficiencies will be rectified quickly by the CPSC.

17. **Understandable Language:** If MSDSs are to be useful, their audience must have some chance of understanding what they say. For the audiences of construction workers and employers, they should be written in plain English, and include "street names" of chemicals (e.g., muriatic acid instead of hydrochloric acid). Instead MSDSs include numerous abbreviations, chemical and medical terms, and other words and phrases that their audience will probably not understand. CPSC labels, on the other hand, tend to be written in language far more understandable to the target audience of consumers and workers.

In conclusion, with the exception of the manufacturer's telephone number, CPSC product labels contain all the product-specific information necessary for an employee to protect himself. The information on product labels is much more readily available in case of emergency than that on MSDSs. The employee only has to pick up the container and

read, instead of going into a file drawer, searching through 300 MSDSs to find the right one, then reading through two to five pages of fine print and incomprehensible chemical data to find the required information.

The lack of consistency in MSDS format makes the task of searching for information even more difficult. Often the sheets are bad photocopies, sometimes totally illegible. Other times the information is trivial--every category filled with "N/A"--not applicable. Such is the case for bagged limestone chips (only the bag is hazardous) or aluminum foil. Sometimes no product name is provided on the MSDS--only a product number--such as on the Liquid Nails Carpet Adhesive MSDS. Other times, no product number is provided--only the name. Sometimes the hazardous chemicals are not listed on the MSDS because they are trade secrets.

In short, existing consumer product labels provide most of the information needed by those who are exposed to hazardous chemicals. To the extent additional information is found to be necessary, the CPSC should step in so that both consumers and workers may benefit. This is not to say that there is no role for MSDSs in the hazard communication process. However, MSDSs should only be required on industrial products which are not commonly available to and used by consumers, and MSDSs should be maintainable at a centralized office location. This approach has the backing of OMB from a paperwork perspective as well as the support of the construction industry in our desire to develop a workable HCS. It will not reduce worker safety in the slightest. Therefore, we strongly urge OSHA to adopt our suggested modifications.

F. Comments on the Definition of "Articles"

The construction industry is relieved to see OSHA has chosen to modify section (iii) of the "articles" definition in section (c) to exempt items "which under normal conditions of use [do] not release more than very small amounts of a hazardous chemical (as determined under paragraph (d) of this section) and [do] not pose a physical hazard or a health risk to employees." (See 53 Fed. Reg. 29852.)

While this language is an improvement, there are still serious and substantive issues of concern to the construction industry left open. Various terms still need clarification, and OSHA has failed to appreciate that the application of the articles definition is an issue in the non-manufacturing sector as well as the manufacturing sector.

The language in section (iii) of "very small quantities, e.g., minute or trace amounts..." suggests the de minimis exemption which the construction industry pressed for in its earlier comments to OSHA and the Advisory Committee on Construction Safety and Health, and which OMB endorsed in its letter of October 28, 1987. Unfortunately, there is still considerable doubt as to what constitutes a "very small quantity" or a "trace amount," although this is an improvement over OSHA's earlier statement exempting "molecular level releases." The definition still allows for inclusion of items that would not meet the "significant risk" test as articulated by the Supreme Court in the Benzene decision.

The construction industry again urges OSHA to adopt a clear and quantifiable de minimis definition which would allow manufacturers and employers alike to objectively determine if an item was covered and would thus trigger the labeling and MSDS requirements. Furthermore, construction employers would be able to more consistently apply the HCS if the definition of "articles" was based on a quantifiable, objective standard.

D. Comments on Employee Training

Another major issue area for our members, as noted above, remains the subject of employee training. Because of the mobility of the construction work force, frequent movements from one job task to another, high personnel turnover, and constant changes in crew size, any type of new training requirements in the building industry, beyond what is already required, impose tremendous practical problems. The complexity of these problems increases geometrically with the sporadic use of a multiplicity of chemicals.

Neither the August 24 amendments to the HCS nor the current NPRM make any changes in the pre-existing training requirements of subsection (h). The NPRM states that employers who comply with the general training requirements of 29 C.F.R. §1926.21 will "largely" be in compliance with the HCS training. 53 F.Reg. 29846. OSHA further invites reliance on 1984 voluntary training guidelines. Yet the language of the HCS itself, which OSHA is so far refusing to modify or clarify, arguably implies that the employee training required under HCS is hazard specific, as opposed to the more generic hazard training permitted under Section 1926.21. The Standard further appears to require that construction work be stopped for new training every time "a new hazard is introduced into (on employee's) work area."

We continue to take the position that these requirements are unrealistic in the construction industry. If OSHA intends to disallow these clearly infeasible aspects of the training provisions, as it certainly should, then the agency should do so explicitly, by modifying the rule. As presently written, an employee may spend more time being trained about hazardous substances than actually working at the site. Obviously, this system cannot work.

We therefore petition OSHA to modify subsection (h) and adopt more general training requirements. Suitable language would be the following:

> (h) Employee information and instruction. Employers shall assure that their employees have been provided with information and instruction on hazardous chemicals at construction sites.
>
> (1) Information. Employers shall assure that their employees have been provided with information regarding the general provisions of the contractor's hazard communication program to include at least: (i) Location of hazardous chemical substances inventory; (ii) Location of material safety data sheets; (iii) Explanation of the reference potential of material safety data sheets and labels; and (iv) Description of labeling practices.
>
> (2) Instruction. Employers shall assure that their employees have received instruction on the chemical hazards at their construction sites. Such instruction shall include training in:
>
> > (a) The common physical and health hazards of chemicals, and
> >
> > (b) The generic measures to protect against exposure to chemical hazards.

The preamble should include provisions that employers only be responsible for training their own employees (i.e. each subcontractor would take care of his employees only) and that once an employee has been trained, he or she need not be retrained each time he or she changes jobs. We do not believe that the additional information which the employee will receive each time he or she is "retrained" justifies the exhorbitant delays which the existing system will entail.

VI. CONCLUSION AND REQUEST FOR HEARING

For the reasons set forth above, OSHA should modify the revised HCS in a manner that will result in provisions which are reasonably necessary and appropriate to reduce significant risks, to the extent such risks exist in construction, and which can feasibly be implemented.

At this time, the Coalition formally requests an opportunity to present a panel of witnesses at OSHA's informal hearing on the HCS, presently scheduled to begin on December 6, 1988.

Respectfully submitted,

THE CONSTRUCTION INDUSTRY
HAZARD COMMUNICATION COALITION

CONSTRUCTION INDUSTRY HAZARD COMMUNICATION COALITION

American Subcontractors Association	Associated Builders and Contractors	National Association of Home Builders
Associated Specialty Contractors	ADSC: The International Association of Foundation Drilling Contractors	Air Conditioning Contractors of America
American Architectural Manufacturers Association	American Fire Sprinkler Association	American Institute of Steel Construction
American Road and Transportation Builders Association	Associated Landscape Contractors of America	Association of the Wall & Ceiling Industries--International
Ceiling and Interior Systems Construction Association	Concrete Sawing and Drilling Association	Door and Operator Dealers Association
Independent Electrical Contractors	Insulation Contractors Association of America	International Association of Drilling Contractors
Mason Contractors Association of America	Mechanical Contractors Association of America	National Association of Cold Storage Contractors
National Association of Minority Contractors	National Association of Plumbing, Heating and Cooling Contractors	National Association of the Remodeling Industry
National Electrical Contractors Association	National Glass Association	National Insulation Contractors Associations
National Ornamental & Miscellaneous Metals Association	National Roofing Contractors Association	National Utility Contractors Association
Painting and Decorating Contractors of America	Sheet Metal and Air Conditioning Contractors National Association	Systems Builders Association

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The CHAIRMAN. Thank you.
Mr. Bishop.

STATEMENT OF JOHN BISHOP, PRESIDENT, GURNEE HEATING AND AIR CONDITIONING, CLOSTER, NJ

Mr. BISHOP. I am the president of Gurnee Heating & Air Conditioning, a small heating and air conditioning contractor in Closter, NJ, and I am also the regional vice president for Associated Builders & Contractors.

I would like to start by saying that both my firm and ABC certainly support the Hazard Communication Standard and we are not backing down a bit from the idea that employees should be safe. We do, however, endorse the various criticisms that you have heard. I will not repeat them; they are in our formal statement.

I would like to tell you some of the things that are more specific to us that might be useful to you. I employ about 50 people. I have about 30 trucks, work on maybe 15 jobsites at a time. Until the day before yesterday, I had a full procedure here in place in my company for the compliance, and I thought I had about 30 MSDSs, including the famous hand cleaner that says if you get it in your eye it is going to sting. I have that one as well as the others.

Yesterday, just through the normal course of events in our business, I received 1,252 MSDSs from the group of wholesalers who have decided that the proper way to deal with this problem is to tell me everything they know. I do not buy all of the products. I have not, obviously, had the chance in the day, to read all of these; I do not know that I buy them or use them. I think I do not, as a matter of fact. However, I have them now.

If I am going to copy those and use those in my business, I calculate I need about 60 sets at some 70,000 copies. That would take somebody at my copy machine full-time, assuming, of course, the machine runs that long, about 60 hours. That is ridiculous.

There are several solutions that could be had to this. One of them is that ACOSH, which is the Advisory Committee on Construction Occupation Safety and Health, is appointed by OSHA and has representatives from the employers, employees, and the public. Two weeks ago, unanimously—which is also an unusual thing because of the different representation there—agreed that the MSDSs in construction could be available to the employee on a 1-day basis and not have to be on the jobsite. And so recommended to OSHA that the regulations be modified so that if I had the MSDSs and my employee could receive them within one shift, that would comply. That would be a wonderful step forward.

I would have to say that although we are heartened by that Committee action, we do not hope that their recommendation will prevail because OSHA has shown a distressing inclination to ignore the advice of their own advisory committee in the past and we have no reason to think that they will change at this time. However, that is the recommendation of their advisory committee.

Another step that you have heard about before is labeling, and particularly the emergency information. If, heaven forbid, anybody had an accident and assuming they could find in this stack the piece of paper, I would defy anybody here, with their education and

otherwise, to figure out what to do and know where to look and figure out what to do. The emergency first-aid information should be on labels. That way, anybody that touches it or anybody going through a jobsite, would know what to do if they had an accident.

I talk to a lot of contractors and I would have to disagree with OSHA who says 67 percent of the contractors comply. I would think you could not go to a single multi-employer jobsite and find it in compliance. Not one.

Mr. Chairman, we are very concerned about this. We recognize the need for employers to be informed about hazards that they face on the job. We want them to be informed. Our desire is not to do away with the Hazard Communication Standard, but we need definitive information in plain English as to hazards, taking into account quantity, type of use, and severity of the hazard, that is, common sense, which you have alluded to several times. And we need procedures that do the job, not a data dump.

In our testimony, we have tried to show:

1. That we support protection of our workers in our industry from hazardous materials.

2. That MSDSs are not an effective administrative medium to accomplish this.

3. That, it is virtually impossible to comply with the present procedural requirements, but OSHA has given practically no attention to the real world; it is dependent on negative reinforcement like fines.

4. That we need practical hazard information based on quantity and so forth, and not just a data dump to relieve liability of the manufacturers and others.

5. That the present procedural requirements are unlikely to be of any real use in an emergency.

6. That our recommendations for labeling and off-site storage of the MSDSs, but have them be immediately available, would greatly improve the situation, make it far more practical.

7. That the failure to make these rules rational, understandable, and realistic, will likely leave this as the construction site Section 89, not enforceable, not complied with, and not effective.

[The prepared statement of Mr. Bishop follows:]

Statement of Associated Builders and Contractors

THE PAPERWORK REQUIREMENTS OF THE OSHA
HAZARD COMMUNICATION STANDARD IN THE CONSTRUCTION INDUSTRY

Statement of John Bishop

President
Gurnee Heating and Air Conditioning
Closter, New Jersey

before the

COMMITTEE ON SMALL BUSINESS
UNITED STATES SENATE

June 22, 1989

Speaking for the Merit Shop

729 15th Street, N.W.
Washington, D.C. 20005
(202) 637-8800

Mr. Chairman; members of this committee, good morning. I am John Bishop, President of Gurnee Heating and Air Conditioning from Closter, New Jersey. My firm is a member of Associated Builders and Contractors and I have served as chairman of the Legislative Committee, and currently am a regional vice president and a member of the ABC National Executive Committee. ABC serves as the voice of the merit shop contractor as it represents almost 20,000 members involved in all aspects of the construction industry.

Let me begin my remarks by stressing that at no time has ABC ever backed down from supporting and promoting worker safety and we do not oppose the Hazard Communication Standard. We feel very strongly that the key to a successful operation is healthy, well informed employees. I am here today to discuss how OSHA's Hazard Communication Standard does little to improve the safety of my employees while imposing an enormous paperwork burden on my company.

The problems with this rule range from burdensome logistics, to vagueness of what is required, to marginal industry awareness that it even even exists. All of what is being said today has been previously submitted to OSHA in the form of regulatory comments, hearing evidence and meeting discussions. Unfortunately, our suggestions from the industry have so far been

ignored.

The cornerstone of the HazCom information system is the Material Safety Data Sheet, about which this committee has already heard quite abit. The MSDS was neither designed for the HCS nor is it intended to be read by anyone without a background in chemistry. It has ceased to be an informational document and instead has become merely an instrument to shield manufacturers from liability for any possible misuse or abuse of a product. Because there is no guidance or limits from OSHA about what constitutes a hazard, MSDSs are routinely issued for products such as crayons and household batteries.

Mr. Chairman, this system is bad for our employees and bad for the employers. For employees, there are two messages that this avalanche of MSDSs sends, neither of which is correct or helpful. The first message is that everything is a hazard. Obviously this is can not be true. The other message would be the exact opposite: that nothing is a hazard. The sheer volume of MSDSs serves to dilute the value of any legitimate warning. It is exactly like "the boy crying wolf": Material Safety Data Sheets are no longer a reliable indicator of the presence of a hazard.

Even with the MSDSs for legitimate hazards, distilling any useful safety-related information out of these documents is difficult if not impossible unless you are concerned with how much of a substance may kill 50 percent of a given rat population. In many, if not most cases, the MSDS is filled with

extremely technical jargon, written by chemists and laboratory technicians and designed to be read by other chemists. And if it isn't full of jargon, it is likely to be blank with many categories indicating "not applicable".

For employers, the logistics of managing this mountain of MSDSs is a formidable task in itself. As a heating and air conditioning contractor, we only receive MSDSs for about 30 products. These include such "dangerous" substances as aloe hand cleaner, nitrogen and oxygen. (If oxygen is a hazard we're all in trouble right now!) OSHA requires me to have a set of MSDSs on every site which covers every hazardous substance I bring onto that site. At an average length of four pages, each set is about 120 pages long. Right now I am operating on 15 different sites. This means about 1800 pages of copying. Furthermore, the MSDSs need to be updated and changed as products and formulas are changed. Considering that these sets are generally not returned from any of the sites, merely maintaining and providing these becomes quite an administrative chore and expense.

As one contractor on a project, I am required to have my full set of MSDSs available for the employees of any other contractor on that project. When you multiply my role by the number of different contractors on a construction project and the variety of products and their MSDSs that will be present, the volume of paperwork quickly becomes overwhelming.

Another aspect of being required to provide MSDSs for each site is storing them. At an ealier hearing held as part of the

rulemaking process, OSHA blithely dismissed the industry's concerns for storing MSDSs on construction sites saying they could be kept in the company truck. Unfortunately, many contractors do not always have a truck on site.

A possible solution to this problem arose just last week. The committee that is charged with advising OSHA on construction issues, and which is composed of both labor and management representatives, uranimously recommended that OSHA allow hard copies of MSDSs to be provided by the next work shift of the employee who has requested it. Under this recommendation, an employer would be responsible for having the information on MSDSs readily accessible. This could include providing immediate oral access to MSDSs via telephone or radio upon request from any employee. If the employee still desired a hard copy, this would be provided no later than that employee's next shift.

This recommendation, if followed, would go a long way to relieving some of the problems of using MSDSs. It would eliminate the heavy copying expenses, as well as the need to arrange some convenient storage place on site. Most importantly, worker safety would not be compromised in the least. Any information a worker needed on the site would still be available in a timely manner.

Another step OSHA could take that would greatly improve the transfer of information to employees and reduce the burden on employers would be requiring more hazard information to be included on product labels. This would insure that the most

important information would be right at the employee's fingertips when it was needed, not across the site buried in a file cabinet or under the seat of a pick-up truck. Improved labeling would all but eliminate the need for the cumbersome and inefficient system of Material Safety Data Sheets now required under the Standard.

Almost as difficult as managing this overload of information is trying to figure out what is required to be in compliance with the Standard. Because this is a "performance oriented" standard, OSHA has left it up to individual employers to decide how they will accomplish the training, and other aspects of the Standard. As a result, many contractors throw their hands up in confusion and give up trying to comply, taking their chances on being cited; or pay exorbitant prices for compliance assistance packages or consultants that may not know the industry or the rule any better than the contractor.

In speaking with other contractors, I have learned what some of their problems have been in dealing with this rule. One of the most consistently mentioned problems is the sheer absence of awareness about this rule. In my own experience, when I have asked other contractors for their required information, I am often met with blank stares, and conversely, no contractor has yet to ask me for my information.

OSHA has taken the position that it is up to the trade associations to spread the word about this rule. I know that this has been a top priority with the three groups here today.

Between us, we have sold thousands of compliance assistance kits and manuals and written hundreds of articles, but despite our best efforts, less than half of the contractors and many of the smallest in the industry belong to a trade association, and even the ones that do, may not pay attention to the information that has been coming out on this rule for the past two years. It is absolute folly on OSHA's part to think that the industry will become aware of this rule without a massive outreach effort on their part. The Environmental Protection Agency realized and accomplished this in the communications issued to implement the regulations on Superfund projects. OSHA's idea of outreach so far seems to be citations for noncompliance after inspections.

Conclusion

Mr. Chairman, members of this committee, the construction industry recognizes the need for employees to be informed about the hazards they face on the job. And we want them to be informed. Our desire is not to do away with the Hazard Communication Standard but to develop one which will allow us to achieve the goal of protecting our workers without burdening us with unnecessary and cumbersome requirements, or burying us in useless paper.

I applaud your determination to look into this matter. The Congress has consistently been aware of the impact of massive paperwork on small businesses and has provided relief by passing the Paperwork Reduction Act. While this committee does not have OSHA oversight responsibility, it does have responsibility and

the charge to see that regulations issued by OSHA comply with the Congressional intent to reduce and/or eliminate unnecessary paperwork. The Hazard Communication Standand for the Construction industry is one example of good intent gone awry. Associated Builders and Contractors shares your concern for the need to protect our workforce, but not at unnecessary expense. A small construction firm is different from any other small business and OSHA needs to recognize the distinctions so that HazCom can become an effective rule in our industry -- not a deterrent.

Thank you for allowing us to bring this to your attention.

Burnee Heating & Air Conditioning Hazardous Substances
Communications Policy

Policy - It is the policy of Burnee Heating & A/C to be in full compliance with all applicable OSHA requirements including the Hazard Substance Communication Program (HSCP).

Objective - The objective of this written Hazard Substance Communication Program is to disseminate effectively to all involved employees their responsibilities under this Standard and to ensure full compliance.

Assignment of responsibility - The Installation Manager will be responsible for organizing, directing and monitoring the program and ensuring our compliance.

Labels - It is the responsibility of the warehouse foreman to ensure that all hazardous materials are labeled when they enter the warehouse. If a hazardous material is transferred to an unmarked container, it is the responsibility of the person making the transfer to get a label from the warehouse foreman to attach to the new container. The new label will be a copy of the MSDS first page attached to the new container.

Material Safety Data Sheets (MSDS)

It is the responsibility of the warehouse foreman to receive the MSDS for any hazardous materials received by Burnee. If the MSDS is not with a known hazardous material, the warehouse foreman will send a written request to the supplier for the MSDS. A copy of all MSDS that come in will be given to the Installation Manager to check for any changes in the MSDS or additions to the list of hazardous materials. Up to date files of the MSDS will be kept by the people on the attached list. All copies of the HSCP will be updated on the first Friday of January, March, May, July, September, and November. Each policy location will be assigned to an individual. It will be the responsibility of that individual to maintain the files.

Training - All employees will be trained during group meetings by their supervisors. At these training sessions employees will:

1)Review hazard evaluation procedures.
2)Review Burnee Hazardous Substances Communication Program.
3)Work Practices to protect from Hazardous Substances.
4)Personal Protective Equipment needed to protect from Hazardous Substances.
5)Emergency procedures dealing with the Hazardous Substances.
6)How we will implement the Hazardous Substances Communication Program here at Burnee.
7)How to read and interpret information on labels.
8)How to read and interpret MSDS.
9)How to obtain available hazardous information.

(Order to use hazard information.

All new employees will be given a training program as part of their orientation, this will be taught by their supervisor or foreman. Training for new Hazardous material or updates on existing Hazardous material will be conducted by each person's supervisor either in groups or individually. These update training sessions will be held by the second Friday of January, March, May, July, September, and November as needed. Each supervisor is responsible to make sure training is conducted for each person working for them. Once this training is complete, each supervisor will submit a list of the people who have been given the updated training to the bookkeeper.

Non-Routine Task Training

To avoid the problems of training in non-routine tasks, all employees will be trained in the safe use of all Hazardous Substances at Business.

Hazardous Information to Outside Contractors or Multi-employee Sites.

The Project Coordinator at the beginning of each new project will forward to our G.C. a copy of the MSDS that will be used on that job. We will, at the same time, request from the G.C. information regarding hazardous materials being used by other trades. We will then train our people as needed. It is the General Contractor's responsibility to notify other trades of our use of hazardous substances. We will however, directly notify other contractors where obviously hazardous circumstances exist.

We depend on our suppliers to tell us if a substance is hazardous.

List of Hazardous Substances

Ref #s	Substance	Common Uses or Name
10	Acetylene	Soldering or Welding
20	Adhesive Sealant 290	Duct Sealer
30	Aloe Care	Hand Soap
40	All-Bright	Coil Cleaner
50	All-Climate Vacuum Pump Oil	Lubricant
60	Anti-Seize Compound Aerosol Type	Anti-rust
70	Anti-Seize Compound Mixture	AntiRust
80	Aqua Ammonia	Blueprint Developers
90	Carbon Dioxide	Genie Propellant
100	CCL-300	Grease
110	Command Aerosol	Aerosol Grease
120	Cryo-Tek	Boiler Anti-freeze
130	Daratheno Aerosol	Moisture Repellent/ for elec. connections
140	Fast-Act	Water Treatment
150	Free W/Poly Aerosol	Penetrant
160	Genetron 12	Refrigerant
170	Genetron 22	Refrigerant
180	Genetron 500	Refrigerant
190	Genetron 502	Refrigerant
200	Liquefied Petroleum Gas	Run Lift or Fork Lift
210	M/M Quick Cure	Pipe Epoxy
220	Muriatic or Hydrochloric Acids	Humidifier Cleaner
230	Nitrogen	Leak Check & Purge
240	Oxygen	Plasma Cutter/Torch

250	Propane (see 300)	-
260	Frema-lube	Grease
270	Durok	Rust Inhibitor
280	Saf-Sol	Degreasing Agent
290	Vision	Windshield Washer Fluid

As of 3/1/89

Locations of Hazardous Substances Communication Policy and Responsibilities

Location	Update Responsibility
Front Office	Lorraine Kimball
Warehouse	Richie Closterman
Branch Office	Bob Hashway
Gang Boxes 383-1	Jim Murphy
383-2	Jim Murphy
383-3	Jim Murphy
383-4	Jim Murphy
384-5	Jim Murphy
Truck # 105	Vinny Caratozzolo
# 107	Dan Steen
# 108	Mike Forshee
# 110	John Akos
# 113	Tom Vetri
# 114	Mark Meyers
# 115	Vic Alalay
# 117	Jim Lassasa
# 118	John Konzon
# 119	John Shields
# 120	Lou Coccaro
# 121	Kevin Dunnigan
# 122	Brian Carlson
# 123	Kevin Bridges
# 124	Mike Pavlu
# 125	Tom Vetri
# 126	Jim Murphy
# 127	Tom Vetri
# 128	Mike Sands
# 129	Bob Hashway
# 130	Frank Hangesheimer
# 131	Milt Kapusta
# 132	Andy Lebrun

In addition all other Gunnee employees not named above will be given copies of the Gunnee HSCP and MSDS which they will be responsible to update.

AIRCO
Division of The BOC Group, Inc
575 Mountain Avenue
Murray Hill
New Jersey 07974
Telephone: 201-464-8100
TWX: 710-984-7970

MATERIAL SAFETY DATA SHEET

Welding Consumables
and Related Products
Conforms to OSHA 1910.1200

IDENTIFICATION

PRODUCT NAME: Acetylene

SYNONYMS: Ethyne

CAS NUMBER: 74-86-2

FORMULA: C_2H_2

CHEMICAL FAMILY: Alkyne

DOT HAZARD CLASS: Flammable gas

DOT IDENTIFICATION NUMBER: 1001

CHEMTREC: 800-424-9300

HEALTH HAZARD DATA

TIME WEIGHTED AVERAGE EXPOSURE LIMIT:

Acetylene is defined as a simple asphyxiant. Oxygen levels should be maintained at greater than 18 molar percent at normal atmospheric pressure which is equivalent to a partial pressure of 135 mm Hg. (ACGIH, 1984-85), no OSHA PEL.

ACETONE: 67-64-1

Acetylene is shipped dissolved in acetone, which comprises approximately 40% of the cylinder weight. Acetone may discharge and burn along with acetylene if the cylinder is stored on its side.
OSHA PEL: 1,000 PPM, ACGIH-TLV: 750 PPM, 1000 PPM (STEL)

SYMPTOMS OF EXPOSURE:

Inhalation: Low concentrations (10-20% in air) cause symptoms similar to that of being intoxicated. Higher concentrations so as to exclude an adequate supply of oxygen to the lungs cause unconsciousness.

TOXICOLOGICAL PROPERTIES:

As a narcotic gas or intoxicant causes hypercapnia (an excessive amount of carbon dioxide in the blood). Repeated exposures to tolerable levels has not shown deleterious effects. The major property is the exclusion of an adequate supply of oxygen to the lungs.

DATE OF ISSUE 11/1/86
SUPERSEDES ALL PREVIOUS ISSUES

RECOMMENDED FIRST AID TREATMENT:

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO ACETYLENE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS AND BE COGNIZANT OF EXTREME FIRE AND EXPLOSION HAZARD.

Inhalation: Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given mouth-to-mouth resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

Hazardous Mixtures of Other Liquids, Solids, or Gases:

Flammable over an extremely wide range in air. Explosive reactions may occur on ignition. Reacts explosively with halogens and halogenated compounds.

PHYSICAL DATA

Boiling Point: Sublimation Point = -118.8°F (-83.8°C)

Liquid Density @ Boiling Point: @ -116°F (-82°C) = 38.8 lb/ft^3 (622 kg/m^3)

Vapor Pressure @ 70°F (21.1°C): 645 psia (4450 kPa)

Specific Gravity @ 70°F, 1 atm (Air=1): @ 68°F (20°C) = 0.906

Solubility in Water: Soluble

Freezing Point: -113°F (-80.6°C)

Appearance and Odor: Pure acetylene is a colorless gas with an ethereal odor. Commercial (carbide) acetylene has a distinctive garlic-like odor.

FIRE/EXPLOSION HAZARDS DATA

Flash Point (Method Used): Gas

Auto Ignition Temperature: 565°F (296°C)

LEL: 2.2 UEL: 80-85*

Extinguishing Media: Carbon dioxide; dry chemical

Electrical Classification: Class 1, Group A

Special Fire Fighting Procedures: If possible, stop flow of escaping gas. Use water spray to cool surrounding containers. Keep personnel away since heated or burning cylinders can rupture violently.

Unusual Fire and Explosion Hazards: GASEOUS ACETYLENE IS SPONTANEOUSLY COMBUSTIBLE IN AIR AT PRESSURES ABOVE 15 PSI (207 kPa). It requires a very low ignition energy so that fires which have been extinguished without stopping the flow of gas can easily reignite with possible explosive force. Acetylene has a density very similar to that of air so when leaking it does not readily dissipate.

* Pure acetylene can ignite by decomposition above 15 psi (207 kPa); therefore, the UEL is 100% if the ignition source is of sufficient intensity.

10

REACTIVITY DATA

Stability: Unstable

Incompatibility (Materials to Avoid): Oxygen and other oxidizers including all of the halogens and halogen compounds. Forms explosive acetylide compounds with copper, mercury, silver, brasses containing more than 66% copper and brazing materials containing silver or copper.

Hazardous Decomposition Products: Carbon monoxide and hydrogen

Hazardous Polymerization: Will not occur

Conditions to Avoid: Do not allow the free gas (outside of cylinder) to exceed 15 psi. Cylinders should not be exposed to sudden shock or sources of heat.

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is in container or container valve, contact CHEMTREC for emergency assistance or your closest Airco location.

Waste Disposal Method:

Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled and valve protection cap in place to Airco for proper disposal.

SPECIAL PROTECTION INFORMATION

Respiratory Protection: Positive pressure air line with mask or self-contained breathing apparatus should be available for emergency use.

Ventilation: Hood with forced ventilation.

Local Exhaust: To prevent accumulation above the LEL.

Special: N/A

Mechanical (Gen.): In accordance with electrical codes.

Other: N/A

Protective Gloves: PVC or rubber in laboratory; as required for cutting & welding.

Eye Protection: Safety goggles or glasses

Other Protective Equipment: Safety shoes, safety shower

10

SPECIAL PRECAUTIONS

Special Labeling Information:

DOT Shipping Name: Acetylene
DOT Shipping Label: Flammable gas
DOT Hazard Class: Flammable gas
I.D. No.: UN 1001

Special Handling Recommendations:

Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when removing gas from the cylinder. DO NOT ALLOW THE FREE GAS TO EXCEED 15 PSI (207 kPA) @ 70°F (21.1°C). Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.

For additional recommendations, consult Compressed Gas Association's Pamphlets G-1 and P-1. NFPA #51-1984. OSHA 1910 - Subparts H & Q

Special Storage Recommendations:

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area of noncombustible construction way from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 130F (54C). Cylinders must be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders being stored for excessive periods of time. Post "No Smoking or Open Flames" signs in the storage or use area. There should be no sources of ignition in the storage or use area.

For additional recommendations, consult Compressed Gas Association's Pamphlets G-1& P-1. NFPA #51-1984. OSHA 1910 - Subparts H & Q

Special Packaging Recommendations:

Since acetylene will explode or combust if its pressure exceeds 15 psi (207 kPa), it is shipped dissolved in acetone or dimethylformamide, which is dispersed in a porous mass within the cylinder. Follow Airco's instructions for the maximum withdrawal rate for each size cylinder so that solvent is not withdrawn with the acetylene.

Most metals except silver, copper, mercury or brasses with more than 66% copper are compatible (noncorrosive) with acetylene.

Other Recommendations or Precautions:

Earth-ground and bond all lines and equipment associated with the acetylene system. Electrical equipment should be nonsparking or explosion proof. Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. Shipments of a compressed gas cylinder, which has not been filled by the owner or with his (written) consent, is a violation of Federal Law (49CFR).

Loctite Corporation

Gurnie Heating & Air Conditioning

705 North Mountain Road
Newington, Connecticut 06111
Telephone: (203) 278-1280
Telex: 99348

1.2.

MATERIAL SAFETY DATA SHEET

PRODUCT IDENTIFICATION

Product Name: ADHESIVE/SEALANT 290
Product Type: Anaerobic
Part No.: 290
Formula No.:

COMPOSITION

Ingredients	% by Wt.	Hazard
Polyglycol dimethacrylates	90-95	See Section IV.
Cumene Hydroperoxide*	3-4	
Saccharin**	2-3	
N,N-Dialkyltoluidines	<1	

*In a single test, pure cumene hydroperoxide caused tumors in one of thirty experimental animals when injected under the skin. **Saccharin has been shown to cause tumors in experimental animals when fed in large amounts for prolonged periods. In light of the low concentration of these components in the product, it is our best technical judgment that normal use of this product poses no such hazards. These warnings are present only to comply with OSHA regulations.

CHEMICAL AND PHYSICAL PROPERTIES

Vapor Pressure: < 5 mm at 80°F
Vapor Density: Unknown
Solubility in Water: Slight
Appearance: Green Liquid
Specific Gravity: 1.07 at 80°F
Boiling Point: > 300°F
pH: dna
Odor: Mild

TOXICITY AND HEALTH HAZARD DATA

Toxicity
Oral LD50 >5000 mg/kg
Dermal LD50 >2000 mg/kg
TLV: Does not apply
Symptoms of Overexposure: May cause dermatitis on prolonged contact in sensitive individuals.

Emergency Treatment Procedures
Ingestion: Do not induce vomiting. Keep individual calm. Obtain medical attention.
Inhalation: Does not apply.
Skin Contact: Flush with water.
Eye Contact: Flush with water.

Personal Protection
Eyes: Safety glasses recommended.
Skin: Rubber or plastic gloves recommended.
Ventilation: Not normally necessary.

ADHESIVE/SEALANT 290

V. FLAMMABILITY AND EXPLOSIVE PROPERTIES

Flash point > 200°F Method T.C.C.
Explosive Limits (% by volume in air) Lower dna % Upper dna %
Recommended Extinguishing Agents CO_2, Foam, Dry Chemical
Hazardous Products Formed by Fire of Thermal Decomposition: Irritating organic vapors.
Unusual Fire or Explosion Hazards: None
Compressed Gasses Name None
Pressure at Room Temperature

VI. REACTIVITY DATA

Stability [X] Stable [ ] Unstable
Hazardous Polymerization [ ] May Occur [X] Will Not Occur
Hazardous Decomposition Products (non-thermal)
None

Incompatibility None

VII. SPILL OR LEAK AND DISPOSAL PROCEDURES

Steps to be taken in case of spill or leak: Soak up in an inert absorbent. Store in partly filled, closed container until disposal.

Recommended methods of disposal: Bury or incinerate in accordance with EPA and local regulations.

VIII. STORAGE AND HANDLING PROCEDURES

Storage: Store below 110°F to preserve shelf-life.
Handling: Avoid prolonged skin contact.

IX. SHIPPING REGULATIONS

Type or Class DOT Unrestricted
IATA Unrestricted

Prepared By: Martin Hauser
Title: Vice President - Environmental Health and Safety
Date: November 1, 1985

MATERIAL SAFETY DATA SHEET : - ALOE CARE (18 OZ) PAGE : 01

(015105-0580P -P0000584-4067) DATE OF ISSUE 11/11/87 | SUPERSEDES 10/28/86

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS
N/A

TRADE NAME & SYNONYMS
ALOE CARE (18 OZ)

CHEMICAL FAMILY
LOTION HAND SOAP

FORMULA
X<--MIXTURE

MANUFACTURERS NAME:
CERTIFIED LABS. DIV. OF NCH CORP.

ADDRESS (NUMBER, STREET, CITY, STATE & ZIP CODE)
BOX 152170
IRVING, TEXAS 75015

PREPARED BY:
KEVIN UHL/T.S. CHEMIST

PRODUCT CODE NUMBER
4067

EMERGENCY TELEPHONE NUMBER
214-438-1381

SECTION II- HAZARDOUS INGREDIENTS

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS AS THE PRODUCT MIXTURE HAS NOT BEEN TESTED AS A WHOLE.

CHEMICAL NAME (INGREDIENTS)	HAZARD	TLV*	PEL*	CAS#
NO HAZARDOUS INGREDIENTS				

PER 29 CFR 1910.1200

SECTION III - PHYSICAL DATA

BOILING PT.(FAHRENHEIT)	200 F.	SPEC GRAVITY (H2O=1)	1.030
VAPOR PRESSURE (MM HG).	17	COLOR	LIGHT GREEN
VAPOR DENSITY (AIR=1)	0.8	ODOR	LAVENDER

ALOE CARE (18 OZ)

(CONTINUED) SECTION III - PHYSICAL DATA PAGE : 02

PH @ 100%	7.0	CLARITY	OPAQUE
PERCENT VOLATILE BY VOLUME (%)	85	EVAPORATION RATE (BU AC = 1)	0.10
SOLUBILITY IN WATER	COMPLETE		
VISCOSITY	VISCOUS		

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT (METHOD USED)
NON-FLAM

FLAMMABLE LIMITS
LEL N/A
UEL N/A

EXTINGUISHING MEDIA "ALCOHOL" <--FOAM X<--CO2 X<--DRY CHEMICAL <--WATER SPRAY <--OTHER

SPECIAL FIRE FIGHTING PROCEDURES

N/A

UNUSUAL FIRE & EXPLOSION HAZARDS

N/A

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

NOT ESTABLISHED FOR MIXTURE. SEE SECTION II.

EFFECTS OF OVEREXPOSURE - ACUTE - (SHORT TERM EXPOSURE)

DIRECT CONTACT WITH EYES MAY CAUSE IRRITATION.
- CHRONIC - (LONG TERM EXPOSURE)

DIRECT CONTACT WITH EYES FOR PROLONGED PERIOD OF TIME WILL CAUSE IRRITATION AND REDDENING.

PRIMARY ROUTE OF ENTRY <-- INHALATION <-- INGESTION X<-- ABSORPTION

EMERGENCY & FIRST AID PROCEDURES
INHALATION :
NOT A HAZARD.

ALOE CARE (18 OZ)

(CONTINUED) SECTION V - TH HAZARD DATA PAGE : 03

EYE CONTACT:
FLUSH EYES WITH PLENTY OF WATER FOR 5-10 MINUTES. SEEK MEDICAL ATTENTION IF ANY IRRITATION PERSIST.

SKIN CONTACT:
N/A

INGESTION :
IF SWALLOWED, DRINK TWO GLASSES OF WATER. SEE A PHYSICIAN IF DISCOMFORT OCCURS.

NOTES TO PHYSICIAN :
N/A

SECTION VI - TOXICITY INFORMATION

N/A

SECTION VII - REACTIVITY DATA

STABILITY	X<--STABLE	<--UNSTABL	CONDIDTIONS TO AVOID
	N/A		

INCOMPATIBILITY (MATERIALS TO AVOID)
N/A

HAZARDOUS DECOMPOSITION PRODUCTS
OXIDES OF SULFUR AND NITROGEN

HAZARDOUS	WILL NOT X <--OCCUR	MAY <--OCCUR	CONDITIONS TO AVOID
POLYMERIZATION	N/A		

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
FLOOD SURFACE WITH PLENTY OF WATER AND FLUSH DOWN DRAIN.

WASTE DISPOSAL METHOD
DISPOSE OF IN ACCORDANCE WITH STATE, FEDERAL, AND LOCAL REGULATIONS CONCERNING HEALTH POLLUTION.

ALOE CARE (18 OZ)

(CONTINUED) SECTION VIII - SPILL OR LEAK PROCEDURES PAGE : 04

NEUTRALIZING AGENT
N/A

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION
N/A

RESPIRATORY PROTECTION
TYPICAL USE OF THIS PRODUCT DOES NOT REQUIRE RESPIRATORY PROTECTION.

PROTECTIVE GLOVES
N/A

EYE PROTECTION
TYPICAL USE OF THIS PRODUCT DOES NOT REQUIRE USE OF EYE PROTECTION.

OTHER PROTECTION
N/A

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE 120 F <--MAX 32 F <--MIN	INDOOR X	HEATED	REFRIGERATED	OUTDOOR X

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
STORE AT MODERATE TEMPERATURES.

OTHER PRECAUTIONS
KEEP OUT OF REACH OF CHILDREN.
READ ENTIRE LABEL BEFORE USING.

SECTION XI - TRANSPORTATION - (FOR FUTURE USE)

APPLICABLE REGULATIONS
<--49 CFR <--IMCO <--TARIFF 6 D <--IATA <--MILITARY AIR (AFR 71-4)

SHIPPING NAME

HAZARD CLASS	ID NUMBER	REPORT QTY

30

LABELS	LIMITED QTY
UNIT CONTAINER	
DOT SPS CONTAINER	NET EXPLOSIVE WT.
AEROSOL PROPELLANT(S)	

SECTION XII - REFERENCES

N/A

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

CERTIFIED LABS, DIV. OF NCH CORP. ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE, STORAGE OR DISPOSAL OF THE PRODUCT IN A MANNER NOT RECOMMENDED ON THE PRODUCT LABEL. USERS ASSUME ALL RISKS ASSOCIATED WITH SUCH UNRECOMMENDED USE, STORAGE, OR DISPOSAL OF THE PRODUCT.

MATERIAL SAFETY DATA SHEET ALL-SHEET PAGE : 01

EMERGENCY PHONE NUMBER -0000 | DATE OF ISSUE SUPERSEDES
REVISED DATE

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS TRADE NAME & SYNONYMS
NA ALL-SHEET

CHEMICAL FAMILY FORMULA
ACRYLIC ACRYLATE DETERGENT X --MIXTURE

MANUFACTURER NAME
CONTACT LOCL DIV OF MFG CORP

ADDRESS(NUMBER, STREET, CITY, STATE & ZIP CODE)
NOW HERE
TYPICAL TEXAS PLANT

PREPARED BY TELEPHONE NUMBER TELEPHONE NUMBER
REVISED STABILITY & STATUS DATE 210-222-1100
EXT 210

SECTION II- HAZARDOUS INGREDIENTS

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL INGREDIENTS AS THE PRODUCT MIXTURE HAS NOT BEEN TESTED AS A WHOLE

CHEMICAL NAME INGREDIENTS	HAZARD	TLV	PEL	LC50
SODIUM METASILICATE	CORROSIVE	2 (PENTA)	2 (PENTA)	1200-72-2
DETERGENT MIXTURE, NEUTRALIZED				
PHOSPHATE	IRRITANT	NOT EST	NOT EST	10422-28-7

SECTION III - PHYSICAL DATA

BOILING PT (F AND MM HG) 212 DEG SPEC GRAVITY (H2O=1) 1.15
VAPOR PRESSURE (MM HG) NA COLOR NONE

ALL-SHEET

CONTINUED SECTION V - HEALTH HAZARD DATA PAGE 02

PHYSICAL EFFECTS ON THE SEVERITY OF EXPOSURE. THE CHANGE LOCAL EFFECT MAY CONSIST OF MULTIPLE AREAS OF SUPERFICIAL DESTRUCTION OF THE SKIN OR OF PROFOUND INSTANT SENSITIVE. SEVERE BURNS MAY RESULT WITH DEEP ULCERATION AND ULTIMATE SCARRING. CHRONIC EYE EXPOSURE CAN LEAD TO DESTRUCTION OF EYE TISSUES WITH POTENTIAL BLINDNESS. CHRONIC INGESTION CAN RESULT IN SEVERE BURNS AND COMPLETE TISSUE PERFORATION OF MUCOUS MEMBRANES OF THE MOUTH, THROAT, ESOPHAGUS AND STOMACH.

EMERGENCY ADVICE OF EATER: -- INHALATION X -- INGESTION X -- ABSORPTION

EMERGENCY & FIRST AID PROCEDURES
INHALATION
GET PERSON OUT OF CONTAMINATED AREA TO FRESH AIR. IF BREATHING HAS STOPPED ARTIFICIAL RESPIRATION SHOULD BE STARTED. OXYGEN MAY BE ADMINISTERED IF READILY AVAILABLE. SEEK MEDICAL ATTENTION IMMEDIATELY

EYE CONTACT
EYES IMMEDIATELY FLUSH EYES WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES HOLDING EYELIDS APART TO ENSURE FLUSHING OF THE ENTIRE EYE SURFACE. WASHING EYES WITHIN 1 MINUTE IS ESSENTIAL TO ACHIEVE MAXIMUM EFFECTIVENESS. SEEK MEDICAL ATTENTION IF IRRITATION PERSISTS.

SKIN CONTACT
IMMEDIATELY WASH CONTAMINATED SKIN WITH PLENTY OF WATER. THIS MAY BE FOLLOWED WITH A RINSE WITH VINEGAR OR DILUTE ACETIC ACID SOLUTION IF AVAILABLE. REMOVE CONTAMINATED CLOTHING AND FOOTWEAR AND WASH CLOTHING BEFORE REUSE. DISCARD FOOTWEAR AND/OR LEATHER IF CONTAMINATED. SEEK MEDICAL ATTENTION IMMEDIATELY

INGESTION
IF INGESTED DO NOT REDUCE VOMITING. GIVE LARGE QUANTITIES OF WATER IF AVAILABLE. GIVE MEDICAL BLANKS OF MILK. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL ATTENTION IMMEDIATELY.

NOTES TO PHYSICIAN
NA

SECTION VI - REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY
ACIDS (PH 2.0 0 DEGREES) 1
ORG MAT (PHP MP MP MEPH) 2
WATER MAT (PHP MPEP) 2
WATER NOT TO MEDIUM DEG 1
ING MAT TO MEDIUM DEG 1
ACT MATERIALS WITH WATER, PROPANE
ORG MAT 3.1-4.3 DEG 3
WATER NOT LONG 2.0-3 3

SECTION VII - REACTIVITY DATA

ALL-SHEET

CONTINUED SECTION IX - PHYSICAL DATA PAGE 03

VAPOR DENSITY (AIR=1) NA GAS SOLUBILITY
PH 9 100% 0.95 GM/L CLARITY TRANSPARENT

PERCENT VOLATILE PH EVAPORATION RATE B.P.
BY VOLUME (%) NA AS = 1 1

SOLUBILITY IN WATER COMPLETE
VISCOSITY NON-VISCOUS

SECTION X - FIRE AND EXPLOSION HAZARD

FLASH POINT METHOD USED FLAMMABLE LIMITS LEL UEL
NON-FLAM NA NA

EXTINGUISHING MEDIA "ALCOHOL" DATE
X --FOAM X --FOAM X --CO2 X --DRY X --CHEMICAL X --SPRAY --OTHER

SPECIAL FIRE FIGHTING PROCEDURES
NA

UNUSUAL FIRE & EXPLOSION HAZARDS
MAY REACT VIOLENTLY WITH ACIDS

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE
NOT ESTABLISHED FOR MIXTURE SEE SECTION 4

EFFECTS OF OVEREXPOSURE - ACUTE - SHORT TERM EXPOSURE
STRONGLY IRRITATING TO THE UPPER RESPIRATORY TRACT WHICH IS USUALLY ASSOCIATED WITH SNEEZING, COUGHING AND DYSPNOEA. CONTACT WITH SKIN CAN CAUSE SEVERE IRRITATION AND DISCOMFORT. EYE CONTACT CAN PRODUCE TEARING, IRRITATION AND DISCOMFORT. ACCIDENTAL INGESTION MAY BE EXPECTED TO PRODUCE IRRITATION, CORROSION AND SUBSEQUENT PERFORATION OF THE ESOPHAGUS AND STOMACH.

- CHRONIC - LONG TERM EXPOSURE
ANSWERS CONCENTRATIONS OF MIST OR SPRAY MAY CAUSE DAMAGE TO THE UPPER RESPIRATORY TRACT AND EVEN TO THE LUNG TISSUE PROPER WHICH COULD PRODUCE

ALL-SHEET

CONTINUED SECTION V - HEALTH HAZARD DATA PAGE 03

PULMONARY EDEMA OR THE SEVERITY OF EXPOSURE. THE CHRONIC LOCAL EFFECT MAY CONSIST OF MULTIPLE AREAS OF SUPERFICIAL DESTRUCTION OF THE SKIN OR OF PROFOUND INSTANT SENSITIVE. SEVERE BURNS MAY RESULT WITH DEEP ULCERATION AND ULTIMATE SCARRING. CHRONIC EYE EXPOSURE CAN LEAD TO DESTRUCTION OF EYE TISSUES WITH POTENTIAL BLINDNESS. CHRONIC INGESTION CAN RESULT IN SEVERE BURNS AND COMPLETE TISSUE PERFORATION OF MUCOUS MEMBRANES OF THE MOUTH, THROAT, ESOPHAGUS AND STOMACH.

EMERGENCY ADVICE OF EATER: -- INHALATION X -- INGESTION X -- ABSORPTION

EMERGENCY & FIRST AID PROCEDURES
INHALATION
GET PERSON OUT OF CONTAMINATED AREA TO FRESH AIR. IF BREATHING HAS STOPPED ARTIFICIAL RESPIRATION SHOULD BE STARTED. OXYGEN MAY BE ADMINISTERED IF READILY AVAILABLE. SEEK MEDICAL ATTENTION IMMEDIATELY

EYE CONTACT
EYES IMMEDIATELY FLUSH EYES WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES HOLDING EYELIDS APART TO ENSURE FLUSHING OF THE ENTIRE EYE SURFACE. WASHING EYES WITHIN 1 MINUTE IS ESSENTIAL TO ACHIEVE MAXIMUM EFFECTIVENESS. SEEK MEDICAL ATTENTION IF IRRITATION PERSISTS.

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INGESTION
IF INGESTED DO NOT REDUCE VOMITING. GIVE LARGE QUANTITIES OF WATER IF AVAILABLE. GIVE MEDICAL BLANKS OF MILK. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL ATTENTION IMMEDIATELY.

NOTES TO PHYSICIAN
NA

SECTION VI - REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY
ACIDS (PH 2.0 0 DEGREES) 1
ORG MAT (PHP MP MP MEPH) 2
WATER MAT (PHP MPEP) 2
WATER NOT TO MEDIUM DEG 1
ING MAT TO MEDIUM DEG 1
ACT MATERIALS WITH WATER, PROPANE
ORG MAT 3.1-4.3 DEG 3
WATER NOT LONG 2.0-3 3

SECTION VII - REACTIVITY DATA

ALL-SHEET

CONTINUED SECTION VII - REACTIVITY DATA PAGE 04

STABILITY X --STABLE --UNSTABLE CONDITIONS TO AVOID
NA

INCOMPATIBILITY MATERIALS TO AVOID
STRONG OXIDIZING REDUCING AGENTS, THE ZINC ALLOYS, STRONG ACIDS AND ALUMINUM UPON PROLONGED EXPOSURE

HAZARDOUS DECOMPOSITION PRODUCTS
NA

ORAL MIST MALE CONDITIONS TO AVOID
HAZARDOUS X --SOLID --SOLID

POLYMERIZATION NA

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
STOP LEAKS CONTAIN SPILL. REMOVE AS MUCH AS POSSIBLE WITH WET VAC NEUTRALIZE REMAINING TRACES OF MATERIAL WITH DILUTED ACID THEN FLUSH AREA WITH WATER FOLLOWED BY LIBERAL CONTAINER OF SODIUM BICARBONATE. REUSE SPILLED MATERIAL IF POSSIBLE. OTHERWISE PLACE IN A CLOSED LABELED CONTAINER AND STORE IN A SAFE PLACE TO AWAIT PROPER DISPOSAL.

WASTE DISPOSAL METHOD
DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS CONCERNING HEALTH AND POLLUTION. DISPOSE VIA APPROVED CHEMICAL WASTE DISPOSAL METHOD IF REGULATIONS PERMIT

NEUTRALIZING AGENT
NEUTRALIZE WITH ANY DILUTED INORGANIC ACID SUCH AS HYDROCHLORIC, SULFURIC NITRIC PHOSPHORIC AND ACETIC ACID

SECTION IX - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION
GOOD INDUSTRIAL HYGIENE PRACTICE DICTATES THAT THE WORK AREA SHOULD BE ISOLATED AND CONTAINED AND PROVIDED WITH ADEQUATE LOCAL EXHAUST VENTILATION OR OTHER CONTROLS TO MAINTAIN THE AIR CONCENTRATION OF MATERIAL VAPORS AND DUSTS/MISTS BELOW 10 MGM3 AS REQUIRED BY OSHA.

RESPIRATORY PROTECTION
USE MSHA - APPROVED RESPIRATOR FOR DUSTS.

ALL-SHEET

CONTINUED SECTION VI - SPECIAL PROTECTION INFORMATION PAGE 06

PROTECTIVE GLOVES
RUBBER, SYNTHETIC ELASTOMERS, PVC OR OTHER
PLASTIC SHOULD BE WORN

EYE PROTECTION
CHEMICAL SPLASH GOGGLES AND FACE SHIELD SHOULD BE
WORN DEPENDING ON THE EXTENT OF EXPOSURE LIKELY

OTHER PROTECTION
PROTECTIVE CLOTHING TO PREVENT SKIN CONTACT

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE HUMIDITY HEATING REFRIGERATION SUNLIGHT
130 F --MAX 32 F --MIN N

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
FOR MAXIMUM PRODUCT LIFE, STORE HEADING SUNLIGHT
STORAGE TIP: STORE PRODUCTS ON PADS ADD TO HELP
PREVENT WATER ACCUMULATION ON AN END AND
CONSEQUENT PRODUCT CONTAMINATION. STORE IN A
COOL, DRY PLACE FOLLOW LABEL DIRECTIONS.
KEEP OUT OF REACH OF CHILDREN

OTHER PRECAUTIONS
MAY DAMAGE METALS DO NOT USE ON POLISHED OR
ANODIZED ALUMINUM DO NOT USE ON AUTOMOTIVE
FINISHES

SECTION XI - TRANSPORTATION - FOR FUTURE USE

APPLICABLE REGULATIONS
--DOT CFR --IMDG --TARIF U.S. --ICTA --MILITARY AIR UNPO T--O

SHIPPING NAME

RADIUM BLADE
ID NUMBER REPORT QTY

LABELS LIMITED QTY

UNIT CONTAINER

BOX BTS CONTAINER NET EXPLOSIVE WT

ALL-SHEET

CONTINUED SECTION XII - TRANSPORTATION - FOR FUTURE USE PAGE 08

ADDITIONAL PROPERTIES

SECTION XIII - REFERENCES

1. DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS 5TH EDITION N. IRVING SAX
2. SUPPLIER MATERIAL SAFETY DATA SHEET
3. THRESHOLD LIMIT VALUE FOR CHEMICAL SUBSTANCES IN THE WORK ENVIRONMENT 2ND EDITION, JUDGE, TIME
4. SHORT REPORT OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES, TIME

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CRYTHEED LABS DIV OF NEW CORP ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE, STORAGE OR DISPOSAL OF THE PRODUCT IN A MANNER NOT RECOMMENDED ON THE PRODUCT LABEL, UNLESS ASSUME ALL RISKS ASSOCIATED WITH SUCH UNRECOMMENDED USE, STORAGE, OR DISPOSAL OF THE PRODUCT

40

ROBINAIR

Rb. Division
Sealed Power Corporation
Robinair Way
Montpelier, OH 43543-0193
Telephone 419-485-5561
TWX: 810-450-2544

V 4

Material Safety Data Sheet

The data herein are provided for hazard communication to our employees, our customers and their employees, and authorized regulatory agencies. For the intended purpose, this MSDS may be duplicated or the data transcribed to an alternative form. The information is given in good faith, but no guarantees or warranties expressed or implied, are made.

TRADE NAME:	DATE PREPARED	ROBINAIR INDEX NO.	PHONE NO. (For Info.)
All Climate Vacuum Pump Oil (13203, 13204)	9-19-85	461.00-07	(419) 485-5561 EMERGENCY PHONE NO.

MANUFACTURED BY:
Sealed Power Corp.
Robinair Division
Robinair Way, Montpelier, OH 43543

CHEMICAL FAMILY:	FORMULA:
Lubricating Oil	NA (Mixture)

SECTION 1 — MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS — Chemical Name & Common Names (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	% *	CAS REGISTRY NUMBER	OSHA PEL	ACGIH TLV	OTHER LIMITS RECOMMENDED
Refined Petroleum Oil(s)	* 100	64742-56-9 64742-65-0	*	5mg/m³	(mist)
Non-Hazardous Ingredients					
TOTAL	100				

* OPTIONAL NA - NOT APPLICABLE NDA - NO DATA AVAILABLE < LESS THAN > MORE THAN

ROBINAIR MATERIAL SAFETY DATA SHEET

TRADE NAME:	DATE PREPARED	ROBINAIR INDEX NO.	PHONE NO. (For Info.)
All Climate Vacuum Pump Oil	9-19-85	461.00-07	(419) 485-5561

SECTION 2 — PHYSICAL/CHEMICAL CHARACTERISTICS

MELTING POINT °C(°F): NA	SPECIFIC GRAVITY (H_2O = 1) 0.87	EVAPORATION RATE (Butyl Acetate =1): <1
BOILING POINT 760 mm HG, °C(°F): 373 (703)	VAPOR DENSITY (AIR = 1) >1	VAPOR PRESSURE (mm Hg and Temperature) mmHG (25°C): $<4X10^{-3}$
SOLUBILITY IN WATER Negligible	pH NDA	
WATER REACTIVE NA	VOLATILE BY VOLUME Negligible	
APPEARANCE AND ODOR Faint yellow or amber liquid, bland odor.		

SECTION 3 — FIRE AND EXPLOSION HAZARD DATA

FLASH POINT AND METHOD USED	AUTO-IGNITION TEMPERATURE	FLAMMABILITY LIMITS IN AIR % BY VOLUME	LEL	UEL
COC, °C(°F): 224(435) See Note 4	NDA		NA	NA

EXTINGUISHER MEDIA: CO_2, dry chemical, foam or water fog.

SPECIAL FIRE FIGHTING PROCEDURES: NDA

UNUSUAL FIRE AND EXPLOSION HAZARDS: Water may cause frothing.

SECTION 4 — REACTIVITY HAZARD DATA

STABILITY	CONDITIONS TO AVOID
☒ Stable ☐ Unstable	NDA

INCOMPATABILITY (Materials to Avoid): Strong Oxidants.

HAZARDOUS DECOMPOSITION PRODUCTS: (Thermal, unless otherwise specified): CO, CO_2

HAZARDOUS POLYMERIZATION	CONDITIONS TO AVOID
☐ May Occur ☒ Will Not Occur	NDA

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* OPTIONAL NA - NOT APPLICABLE NDA - NO DATA AVAILABLE < LESS THAN > MORE THAN

ROBINAIR MATERIAL SAFETY DATA SHEET

TRADE NAME:	DATE PREPARED	ROBINAIR INDEX NO.	PHONE NO. (For info.)
All Climate Vacuum Pump Oil	9-19-85	461.00-07	(419) 485-5561

SECTION 5 — HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY	☒ Inhalation ☐ Skin Absorption ☒ Ingestion ☐ Not Hazardous	CARCINOGEN LISTED IN	☐ NTP ☐ IARC Monograph ☐ OSHA ☒ Not Listed See Note 5

THRESHOLD LIMIT VALUE (TLV) / PERMISSABLE EXPOSURE LIMIT (NDA) 5mg/m^3 As oil mist (ACGIH 1984-85; OSHA 1972)

HEALTH HAZARDS

EFFECTS OF OVEREXPOSURE: ACUTE

Eyes: May be mildly irritating.
Practically non-irritating (0.7-1.7/110, Draize)

Inhalation: Low risk of inhalation. In enclosed spaces or when hot, vapors may reach concentrations sufficient to cause drowsiness, dizziness, headache, nausea, or lung irritation. Mists above TLV may cause chemical pneumonitis. LC50/4 H(RAT): >5,000 mg/m^3

Ingestion: Generally low toxicity. Very large amounts may cause generalized depression, headache drowsiness, nausea, vomiting or diarrhea. Small doses may produce irritation and diarrhea. LD50 (RAT): >15g/Kg See Note 2

Skin: Dermal Contact: Low irritant.
Absorption: No probable acute hazard.
Non-irritating or practically non-irritating (0-0.6/8, Draize)

EFFECTS OF OVEREXPOSURE: CHRONIC

Eyes:
None expected

Inhalation:
None expected

Ingestion:
None expected

Skin:
Prolonged and/or frequent contact may cause drying, cracking (Dermatitis) or Folliculitis

EMERGENCY FIRST AID PROCEDURES - Seek medical assistance for further treatment, observation and support if necessary.

Eyes:
Flush with large volumes of water. See physician if any complications arise.

Inhalation:
Remove to fresh air. Respiratory support if necessary. Seek medical aid.

Ingestion:
Do not induce vomiting. Seek medical aid.
See Note 1

Skin: Wash with soap and water. Do not wear heavily contaminated clothing before laundering.
Injection: Subcutaneous injection is a medical emergency. Seek medical aid immediately
See Note 1

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* OPTIONAL NA - NOT APPLICABLE NDA - NO DATA AVAILABLE < LESS THAN > MORE THAN

ROBINAIR MATERIAL SAFETY DATA SHEET

TRADE NAME:	DATE PREPARED	ROBINAIR INDEX NO.	PHONE NO. (For Info.)
All Climate Vacuum Pump Oil	9-19-85	461.00-07	(419) 485-5561

SECTION 6 — CONTROL AND PROTECTIVE MEASURES

RESPIRATORY PROTECTION (Specify Type)	Normally none required. If high vapor or mist concentrations expected - use respirator NIOSH/MSHA approved is required.
PROTECTIVE GLOVES	Oil impervious gloves
EYE PROTECTION	Safety goggles, or chemical splash goggles
VENTILATION TO BE USED	☒ Local Exhaust To keep mists below TLV ☐ Mechanical (general) NDA ☐ Special ☒ Other (Specify) Very high mist concentrations can result in a fire and explosion hazard.
OTHER PROTECTIVE CLOTHING AND EQUIPMENT	Wear body-covering work clothes to avoid prolonged or repeated exposure.
HYGIENIC WORK PRACTICES	Launder soiled work clothes before reuse.

SECTION 7 — SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Review current local, state and federal laws, codes, statutes and regulations to determine the appropriate agencies to be notified, and the conditions under which they should be notified (See also Sections 1, 4 & 6).

Remove sources of heat or ignition, provide adequate ventilation, contain leak. Absorb small spills with suitable material such as rags, straw or sand. Report spills as required to appropriate authorities.

Protective Measures During Repair and Maintenance of Contaminated Equipment: Refer to Section 6 - Special Protection Information. Avoid prolonged contact with used oil, wash skin thoroughly with soap and water.

WASTE DISPOSAL METHOD: Review current local, state and federal statutes, codes, laws and regulations to determine the current status and appropriate disposal method for the ingredients listed in Section 1.

It is the responsibility of the user to determine if the material is a hazardous waste at the time of disposal.
Check before disposing to be sure you are in compliance with all applicable laws and regulations. See Note 3

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* OPTIONAL NA - NOT APPLICABLE NDA - NO DATA AVAILABLE < LESS THAN > MORE THAN

ROBINAIR MATERIAL SAFETY DATA SHEET

TRADE NAME	DATE PREPARED	ROBINAIR SHEET NO.	PHONE NO. (For Info.)
All Climate Vacuum Pump Oil	9-19-85	461.00-07	(419) 485-5561

SECTION 8 — PRECAUTIONS FOR SAFE HANDLING AND TRANSPORTATION

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Store below 120°F. Do not apply high heat or flame to container. Keep separate from strong oxidizing agents.

OTHER PRECAUTIONS AND/OR SPECIAL HAZARDS

Caution:
Empty containers may contain product residue which could include flammable or explosive vapors. See Note 3

DOT INFORMATION:

DOT/UN Shipping Name: Petroleum Lubricating Oil
DOT Hazard Class: Non-Hazardous
DOT/UN Hazard Identification Number: None assigned
DOT Shipping Container Restrictions: None

Hazardous Material Placard/Label: None

NFPA Rating *	Health	Flammability	Reactivity	Special	NHIS Rating *	Health	Flammability	Reactivity	Personal Protection
	1	1	0						

NOTES

1. Notes to Physician: If viscosity is less than 100 SUS at 100°F, careful gastric lavage with tight fitting or cuffed tube is to be preferred over emesis.
If viscosity is greater than 100 SUS at 100°F, emesis may be induced for large quantities.
Aspiration may cause chemical pneumonitis or lipoid pneumonia.
Subcutaneous injection requires prompt surgical debridement.
If not familiar with technique, seek skilled advise. SUS Viscosity at 100°F = 200.

2. Toxicity Summary: Slightly toxic, 1 pt. to 1 qt. is approximate lethal oral dose for 150 lb. human adult.

3. Consult appropriate Federal, State, and Local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product.

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* OPTIONAL NA - NOT APPLICABLE NDA - NO DATA AVAILABLE < LESS THAN > MORE THAN

ROBINAIR MATERIAL SAFETY DATA SHEET

TRADE NAME:	DATE PREPARED	ROBINAIR INDEX NO.	PHONE NO. (For Info.)
All Climate Vacuum Pump Oil	9-19-85	461.00-07	(419) 485-5561

NOTES

4. Flash Point, PM, °C(°F): 218(424)
   Fire Point, COC, °C(°F): 252(485)

5. The base stocks used in "All Climate Vacuum Pump Oil" are best characterized by Class 3 (Severely Solvent- Refined Oils), and do not require carcinogenic labeling under OSHA's Hazard Communication Standard. This product is not listed as a carcinogen or potential carcinogen by NTP, IARC, or by OSHA.

* OPTIONAL NA - NOT APPLICABLE NDA - NO DATA AVAILABLE < LESS THAN > MORE THAN

D. P. Schrock

NAME

Director of Manufacturing and Distribution

TITLE

D. P. Schrock 6-18-86

SIGNATURE DATE

ROBINAIR
Robinair Division
Sealed Power Corporation
Robinair Way
Montpelier, OH 43543-0183
Telephone 419-485-5561
TWX: 410-490-2544

WCS-6 PC775
85-60/109892
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392164

Gurney Heating - Air Conditioning

MHART
STENING SYSTEMS GROUP

BOSTIK DIVISION
Boston Street
Middleton, MA 01949
617-777-0100 Telex 200282

Bostik

MATERIAL SAFETY DATA SHEET

SECTION I IDENTIFICATION DATA

056240 5033000
PRODUCT: NEV-SZ REG NSA-16 16OZ AER MSDS NO: 056240
CHEMICAL FAMILY: Anti-Sieze Compound Aerosol Type

SECTION II HAZARDOUS INGREDIENTS

			TLV UNITS*
COPPER POWDER		5.2%	1.00 MG/M3
COPPER FLAKE POWDER	CAS No. 7440-50-8		
ETHYLENE CHLORIDE		60.0%	100.00 PPM
DICHLOROMETHANE	CAS No. 75-09-2		
CARBON DIOXIDE		5.0%	5000.00 PPM
CO2	CAS No. 124-38-9		

TLV for Vapors is 115.83 Ppm
* Numbers shown represent the lower of the OSHA PEL or the ACGIH TLV
Common or trade names are shown on the line under the chemical name, they are not shown if they are the same as the chemical name.

SECTION III PHYSICAL DATA

VAPOR PRESSURE IN PSIG	70
BOILING POINT IN DEGS F	-99 TO 104
VAPOR DENSITY (AIR-1)	2.82
SOLUBILITY IN WATER	0.8 %
EVAPORATION RATE	17.0 (Butyl Acetate-1)
	2.43 (Ethyl Ether-1)
SPECIFIC GRAVITY	1.32
	11.04 Pounds per Gallon
PERCENT VOLATILE BY WEIGHT	65.0
VOLUME	66.1
APPEARANCE AND ODOR	A black gel with a sweet odor.

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056240 MATERIAL SAFETY DATA SHEET PAGE 2

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	Not Available
LOWER EXPLOSIVE LIMIT	11.07 % (Calculated)
UPPER EXPLOSIVE LIMIT	23.07 % (Calculated)
AUTOIGNITION POINT (VAPORS)	Not Available
AUTOIGNITION POINT (SOLIDS)	Not Available

SPECIAL FIREFIGHTING PROCEDURES AND
UNUSUAL FIRE AND EXPLOSION HAZARDS Use self-contained breathing apparatus.
EXTINGUISHING MEDIA Water spray, foam, dry chemical, carbon dioxide.

SECTION V HEALTH HAZARD DATA

The information shown below refers generally to a component of the product but as required by OSHA 1910.1200 the hazards of any ingredient must be extended to the product as a whole unless testing of the product has been performed.

INGESTION	Hazardous if ingested. MSDS rating of ingredient or ingredient has an Oral LD50 of 50 to 500 Mg/Kg.
ABSORPTION	No hazard known at this time.
INHALATION	Hazardous if inhaled. Ingredient has an LC50 of 200-2000 ppm (1 Hr. exposure)
CONTACT	Ingredient causes eye irritation.
CORROSION	No hazard known at this time.
FLAMMABILITY	Not applicable.

FIRST AID:

INGESTION If swallowed, call a physician. The attending physician must decide whether or not to induce vomiting based on his evaluation of the patient.

INHALATION If inhaled remove to fresh air. If not breathing give artificial respiration, preferably mouth to mouth. If breathing is difficult give oxygen. Call a physician.

CONTACT In case of contact, immediately flush eyes with plenty of water

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056240 MATERIAL SAFETY DATA SHEET PAGE 3

SECTION V HEALTH HAZARD DATA (CONT)

for at least 15 minutes.
Call a physician.

SYMPTOMS OF OVEREXPOSURE Irritation,Lightheadedness,Nausea,Vomiting, Narcosis.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE None known to BOSTIK.
ENTRY ROUTE Ingestion,contact,inhalation.
CHRONIC EFFECTS Long term overexposure to the hazardous materials in this product have been associated with Central Nervous System Problems,Kidney and Liver Damage.
TARGET ORGANS Cardiovascular System,Central Nervous System,Eyes,Skin.

NONE OF THE INGREDIENTS IN THIS PRODUCT EXCEEDING A CONCENTRATION LIMIT OF 0.1% ARE ON THE IARC, NTP, OR OSHA LISTS OF CARCINOGENIC HAZARDS

SECTION VI REACTIVITY DATA

STABILITY Stable
MATERIALS TO AVOID Lithium,Magnesium,Potassium,Sodium,Pure Oxygen.
HAZARDOUS DECOMPOSITION PRODUCTS
Unknown due to the complex nature of this material. Fumes from complete or incomplete combustion of this material may include carbon dioxide, carbon monoxide, water vapor, oxides of nitrogen or a wide variety of innocous or toxic fumes.Hydrogen Chloride,Phosgene may also be produced..
HAZARDOUS POLYMERIZATION Will not occur.

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN WHEN MATERIAL IS SPILLED OR RELEASED
If liquid, soak up with absorbent material such as sand, earth,sweeping compound or some other absorbent material. Package absorbent material or solid product in steel drums which are in good condition.
Thoroughly clean area where spill occurred.

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056240 MATERIAL SAFETY DATA SHEET PAGE 4

SECTION VII SPILL OR LEAK PROCEDURES (CONT.)

WASTE DISPOSAL METHOD Dispose of in accordance with federal, state, and local regulations. Be aware that state and local requirements may differ widely depending on location and in many cases be different from federal rules When intending to dispose of this material, the user is advised that this product would not be classified as a Hazardous Waste under Federal Regulations in effect at the time of printing of this MSDS.

SECTION VIII SPECIAL PROTECTION INFORMATION

VENTILATION	Local exhaust is preferred,Mechanical exhaust is acceptable.
PROTECTIVE GLOVES	Neoprene rubber,Nitrile,Impervious plastic.
EYE PROTECTION	Safety glasses or full face shield.
OTHER PROTECTION	Safety shower and eye bath.

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS FOR HANDLING AND STORING
Store in a cool location (60-80 degrees F) away from sunlight and any source of heat. Keep container tightly closed when not being used.

OTHER PRECAUTIONS
Use with adequate ventilation, avoid prolonged or repeated breathing of vapors. Avoid skin contact.

IMPORTANT NOTICE SECTION

IMPORTANT NOTICE: All statesents, technical information and recommendations set forth herein are based on information or tests which BOSTIK believes to be reliable. However, BOSTIK cannot guarantee their accuracy or completeness. The buyer should conduct his own tests of this product before use to determine proper preparation technique and suitability for the proposed application. BOSTIK's sale of this product is limited to the terms and conditions set forth on BOSTIK's order acknowledgement.

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056240 MATERIAL SAFETY DATA SHEET PAGE 5

IMPORTANT NOTICE SECTION (CONT.)

To summarize, BOSTIK's only warranty is that the product conforms with its written specifications, and is free from defects under normal usage; and BOSTIK's only obligation for non-compliance with this warranty is to replace the product or refund the buyer's purchase price. BOSTIK DISCLAIMS THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. In no case will BOSTIK be liable for direct, consequential, economic or other damages, except for the replacement or refund as set forth above.

PREPARED BY: D.C.Molberg 8/13/87

Furnace Heat
37583
5A

Bostik.

Boston Street
Middleton, MA 01949
(617) 777-0100

NEVER-SEEZ

MATERIAL SAFETY DATA SHEET

missing

SECTION I — IDENTIFICATION DATA

047740 3020
PRODUCT: NEV-SZ REG MSDS NO: 047740
CHEMICAL FAMILY: Anti-Seize Compound(Mixture)

SECTION II — HAZARDOUS INGREDIENTS

			TLV UNITS*
COPPER POWDER COPPER FLAKE POWDER	CAS No. 7440-50-8	14.7%	1.00 MG/M3
ZINC OXIDE	CAS No. 1314-13-2	2.3%	10.00 MG/M3
ALUMINUM FLAKE ALUMINUM	CAS No. 7429-90-5	2.6%	10.00 MG/M3

* Numbers shown represent the lower of the OSHA PEL or the ACGIH TLV
Common or trade names are shown on the line under the chemical name, they are not shown if they are the same as the chemical name.

SECTION III — PHYSICAL DATA

VAPOR PRESSURE IN MM HG	Not Available
BOILING POINT IN DEGS F	Not Available
VAPOR DENSITY (AIR-1)	Not Available
SOLUBILITY IN WATER	0.0 %
EVAPORATION RATE	Not Available
SPECIFIC GRAVITY	1.37 11.39 Pounds per Gallon
PERCENT VOLATILE BY WEIGHT	0.0
VOLUME	0.0
APPEARANCE AND ODOR	A silvery gray anti-sieze with a greaselike odor.

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	Not Available
LOWER EXPLOSIVE LIMIT	Not Available
UPPER EXPLOSIVE LIMIT	Not Available
AUTOIGNITION POINT (VAPORS)	Not Available
AUTOIGNITION POINT (SOLIDS)	Not Available

SPECIAL FIREFIGHTING PROCEDURES AND
UNUSUAL FIRE AND EXPLOSION HAZARDS Use self contained breathing apparatus.
EXTINGUISHING MEDIA ---- Water Spray,Foam,Dry Chemical,Carbon Dioxide.

SECTION V HEALTH HAZARD DATA

The information shown below refers generally to a component of the product but as required by OSHA 1910.1200 the hazards of any ingredient must be extended to the product as a whole unless testing of the product has been performed.

INGESTION	No hazard known at this time.
ABSORPTION	No hazard known at this time.
INHALATION	No hazard known at this time.
CONTACT	Ingredient causes eye irritation.
CORROSION	No hazard known at this time.
FLAMMABILITY	Contains a flammable solid.

FIRST AID:
CONTACT In case of contact,immediately flush eyes with plenty of water for at least 15 minutes. Call a physician. IN CASE OF FIRE USE EXTINGUISHING AGENTS RECOMMENDED.

SYMPTOMS OF OVEREXPOSURE None known to BOSTIK
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE None known to BOSTIK
ENTRY ROUTE Contact

NONE OF THE INGREDIENTS IN THIS PRODUCT ARE ON THE IARC,NTP, OR OSHA LISTS OF CARCINOGENIC HAZARDS

SECTION V HEALTH HAZARD DATA (CONT)

CHRONIC EFFECTS None known to BOSTIK

SECTION VI REACTIVITY DATA

STABILITY Stable
MATERIALS TO AVOID Strong oxidizers or acids.
HAZARDOUS DECOMPOSITION PRODUCTS
Unknown due to the complex nature of this material. Fumes from complete or incomplete combustion of this material may include carbon dioxide, carbon monoxide, water vapor, oxides of nitrogen or a wide variety of innocuous or toxic fumes.
HAZARDOUS POLYMERIZATION Will not occur.

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN WHEN MATERIAL IS SPILLED OR RELEASED
If liquid, soak up with absorbent material such as sand, earth, sweeping compound or some other absorbent material. Package absorbent material or solid product in steel drums which are in good condition.
Thoroughly clean area where spill occurred.
WASTE DISPOSAL METHOD Dispose of in accordance with federal, state, and local regulations. Be aware that state and local requirements may differ widely depending on location and in many cases be different from federal rules When intending to dispose of this material, the user is advised that this product would not be classified as a Hazardous Waste under Federal Regulations in effect at the time of printing of this MSDS.

SECTION VIII SPECIAL PROTECTION INFORMATION

VENTILATION Not normally required.
PROTECTIVE GLOVES Impervious plastic.

SECTION VIII SPECIAL PROTECTION INFORMATION (CONT.)

EYE PROTECTION - Safety glasses or full face shield.
OTHER PROTECTION Safety shower and eye bath.

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS FOR HANDLING AND STORING
Store in a cool location (60-80 degrees F) away from sunlight and any source of heat. Keep container tightly closed when not being used.
OTHER PRECAUTIONS
Use with adequate ventilation, avoid prolonged or repeated breathing of vapors. Avoid skin contact.

IMPORTANT NOTICE SECTION

IMPORTANT NOTICE: All statements, technical information and recommendations set forth herein are based on information or tests which BOSTIK believes to be reliable. However, BOSTIK cannot guarantee their accuracy or completeness. The buyer should conduct his own tests of this product before use to determine proper preparation technique and suitability for the proposed application. BOSTIK's sale of this product is limited to the terms and conditions set forth on BOSTIK's order acknowledgement.

To summarize, BOSTIK's only warranty is that the product conforms with its written specifications, and is free from defects under normal usage; and BOSTIK's only obligation for non-compliance with this warranty is to replace the product or refund the buyer's purchase price. BOSTIK DISCLAIMS THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. In no case will BOSTIK be liable for direct, consequential, economic or other damages, except for the replacement or refund as set forth above.

PREPARED BY: D.C.Malberg 7/2/85

MATERIAL SAFETY DATA SHEET

AQUA AMMONIA

DISTRIBUTOR:

W. D. SERVICE COMPANY
780 Creek Road
P.O. Box 147
Bellmawr, New Jersey 08031

CORPORATE EMERGENCY TELEPHONE
(609) 931-6100
(215) 923-8890
CHEMTREC (CMA) 1-800-424-9300

DESCRIPTION

CHEMICAL NAME: Ammonium Hydroxide Solution — CAS REGISTRY NO.: 1336-21-6
SYNONYMS: Aqua Ammonia
CHEMICAL FAMILY: Ammonia — FORMULA: $NH_4OH + H_2O$ — MOL. WT.: 35.05 (NH_4OH)
COMPOSITION: 29.4% by weight of ammonia gas dissolved in water.

STATEMENT OF HEALTH HAZARD

HAZARD DESCRIPTION: Irritant and corrosive to skin, eye, respiratory tract and mucous membranes. May cause severe burns, eye and lung injuries. Skin and respiratory related diseases aggravated by exposure.
Not recognized by OSHA as a carcinogen.
Not listed in the National Toxicology Program annual report.
Not listed as a carcinogen by the International Agency for Research on Cancer.

EXPOSURE LIMITS: Vapor - 50 ppm, 35 mg/m³ PEL (OSHA)
25 ppm, 18 mg/m³ TLV (ACGIH)

EMERGENCY TREATMENT

EFFECTS OF OVEREXPOSURE: Skin: local irritation, burns, blister formation. Eye: burns, may lead to blindness. Ingestion: burning pain in mouth, throat, stomach, thorax, constriction of throat, coughing, followed by vomiting or diarrhea. Probable lethal ingestion dose is 3-4 ml. (1 ounce). Inhalation: irritation, headache, coughing, severe lung congestion, breathing difficulty, convulsions, shock).

EMERGENCY AID: Skin: flush with copious amount of water while removing contaminated clothing, shoes. Do not rub or apply ointment on affected area. Ingestion: if conscious, give large amount of water to drink. Refer immediately to physician. Eye: flush with copious amount of water for 15 min. Eyelids should be held apart and away from eyeball for thorough rinsing. Inhalation: remove to fresh air. Administer oxygen or artificial respiration if necessary. IF SYMPTOMS PERSIST OR EXPOSURE IS SEVERE, SEEK PROMPT MEDICAL HELP.

NOTE TO PHYSICIAN: Eye injury may appear as delayed phenomenon. Pulmonary edema may follow chemical pneumonitis. Supportive treatment with necessary ventilatory actions, including oxygen, may warrant consideration.

PHYSICAL DATA

BOILING PT.: NH_3 vapors released on warming — FREEZING PT.: -77.7°C (-108°F)
VAPOR PRESSURE: @ 15.5°C: 420-475 mm Hg — VAPOR DENSITY (Air=1): less than 1
SPECIFIC GRAVITY: 0.8974 at 60°F — SOLUBILITY IN WATER: Complete
PERCENT VOLATILE: 100% at 212°F — EVAPORATION RATE (Water=1): 5min.
APPEARANCE AND ODOR: Colorless liquid and pungent order

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: None — AUTOIGNITION TEMP.: Not applicable
FLAMMABLE LIMITS IN AIR: for evolved ammonia: LFL: 16% UEL: 25%
EXTINGUISHING MEDIA: Non-combustible

SPECIAL FIRE-FIGHTING PROCEDURES: Not considered a primary fire hazard, but care should be taken to avoid exposure to liquid product involved in fire. Wear splash-proof, gas-tight chemical goggles, respiratory protection, rubber gloves and clothing to avoid contact as needed. Cool fire-exposed containers.

UNUSUAL FIRE AND EXPLOSION HAZARDS: When heated, material will give off ammonia gas, a strong irritant to the respiratory tract and moist skin. Closed containers exposed to extreme heat may develop pressure. Decomposed ammonia may form nitrogen oxides.

80

Ref #80

MATERIAL SAFETY DATA SHEET

AQUA AMMONIA (Continued)

CHEMICAL REACTIVITY

STABILITY: Stable at room temperature. Aqua ammonia will react exothermically with acids. Releases ammonia vapor when heated.

CONDITIONS TO AVOID: Avoid mixing with sulfuric acid or other strong mineral acids; mixing with hypochlorites (chlorine bleach), other halogens, sodium hydroxide. Avoid contact with galvanized surfaces, copper, brass, bronze, aluminum alloys, mercury, gold, silver, strong oxidizers. Avoid heating.

HAZARDOUS DECOMPOSITON PRODUCTS: Ammonia decomposition to hydrogen and nitrogen gases above 450°C (842°F).

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN: Wear respiratory protection and protective clothing, see PROTECTIVE EQUIPMENT. Stop source if possible. Stay upwind and use water spray to absorb the evolved gas. Dilute with large amount of water. Contain spill by diking.

WASTE DISPOSAL: Listed as hazardous substance under CWA (40 CFR 116.4, 40 CFR 117.3) Reportable Quantity, Category C, 1000 #(454kg). Comply with all regulations. Suitably diluted, product may be disposed of on agricultural land as fertilizer. Keep spill from entering streams or lakes.

SPECIAL PROTECTION AND PROCEDURES

RESPIRATORY PROTECTION: MSHA/NIOSH approved respiratory protection with full facepiece for gas and vapor contaminants effective for ammonium hydroxide and able to be used for entry and escape in emergencies. Refer to 29 CFR 1910.134 and ANSI Z88.2-1980 for requirements and selection.

VENTILATION: Local exhaust sufficient to keep ammonia gas to 50 ppm or less. Refer to 29 CRF 1910.134 and ANSI Z9.2-1960 for requirements and selection.

PROTECTIVE EQUIPMENT: Splash-proof, gas-tight chemical safety goggles, rubber gloves and overshoes to prevent contact. Cotton work clothes recommended. Refer to 29 CRF 1910.132 to 1910.136 for requirements.

SPECIAL PRECAUTIONS

HANDLING AND STORING: Keep in strong glass or plastic, tightly closed containers. Store in cool (26.7°C (80°F)) and well-ventilated area.

WORK PLACE PROTECTIVE EQUIPMENT as discussed above should be near, but outside of aqua ammonia. Eyewash and safety shower in immediate vicinity. See 29 CFR 1910.141 for workplace requirements.

DISPOSAL: Aqua ammonia is listed as a hazardous substance under FWPCA. See WASTE DISPOSAL.

PERSONAL: Avoid unnecessary exposure. Use protective equipment as needed. Do not wear contact lenses without gas-tight chemical goggles.

LABELING AND SHIPPING

HAZARD CLASS: Corrosive Material

PROPER SHIPPING NAME: Ammonium Hydroxide (Aqua Ammonia) Corrosive Material NA-2672 (RQ)

PLACARD: Corrosive

LABEL: Corrosive NA-2672
IDENTIFICATION NO.: NA-2672

National Fire Protection Assoc. Hazard Rating:

Hazardous Materials Identification System Label:

AMMONIUM HYDROXIDE	
HEALTH	3
FLAMMABILITY	1
REACTIVITY	0
PERSONAL PROTECTION	G

OTHER REGULATORY REQUIREMENTS

[illegible] Hazardous Substances Compensation and Liability Act of 1980 any environmental release of [illegible] must be reported promptly to the National Response Center [illegible] and any shipment of product containing 5% or more ammonia requires a POISON [illegible] (49 CFR 172.101).

The information, data, and recommendations in this material safety data sheet relate only to the specific material designated herein and do not relate to use in combination with any other material or in any process. The information, data, and recommendations set forth herein are believed by us to be accurate. We make no warranties, either expressed or implied, with respect thereto and assume no liability in connection with any use of such information, data, and recommendations.

60

Welding Products
[illegible] BOC Group Inc
[illegible] Mountain Avenue
Murray Hill
New Jersey 07974
Telephone 201-464-8100
TWX 710-984-7970

Material Safety Data Sheet

ISSUE DATE AND REVISIONS 11/1/84
CAS NUMBER 124-38-9
DOT HAZARD CLASS Nonflammable Gas
DOT IDENTIFICATION NUMBER UN 2187
CHEMTREC 800-424-9300

PRODUCT NAME
CARBON DIOXIDE

SYNONYMS
Carbonic Acid, Carbonic Anhydride

FORMULA
CO2

CHEMICAL FAMILY
Gas

HAZARDOUS INGREDIENTS	WT.%	TLV*	WT%	TLV*
Carbon Dioxide	100%	5000 ppm (1)		

ACGIH 1984 ed.

PHYSICAL DATA

[illegible]	Liquid Density at Boiling Pt.
-[illegible] .35°F	0.115
Vapor Pressure	Gas Density
733 @ 60°F	0
Solubility in Water	Specific Gravity
.14% @ 20°c	1.53

Appearance and Odor

Colorless Gas with Slight Odor. May also be a liquid or solid.

FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Flammable Limits
None. Nonflammable Gas	LEL 0 % UEL 0 %

Extinguishing Media

None

Special Fire Fighting Procedures

Remove from direct heat or open flame or keep cool with [illegible]

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Material Safety Data Sheet (G-2)

HEALTH HAZARD DATA

Slightly Toxic Asphyxiant. Causes headaches, dizziness and increases blood pressure and heart rate when inhaled. Contact with liquid or solid will ca burns, frostbite or blindness.

Recommended First Aid Treatment - Provide oxygen. Treat areas exposed to liquid or solid as frostbite. Employ First Aid techniques recommended by t: Red Cross.

REACTIVITY DATA

Stability	Conditions to Avoid
Unstable	None
Stable X	

Incompatibility (Materials to avoid)

Chemically active metals, such as sodium, potassium, hot titanium.

Hazardous Polymerization	Conditions to Avoid
May Occur	
Will Not Occur X	None

SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled - Leaks will dissipate rapidly and harmlessly to atmosphere. For releases in confined areas, remove all personnel and ventilate area. Do not ventilate area with pure oxygen.

Waste Disposal Method - Vent to atmosphere in open area. Remove valves.

SPECIAL PROTECTION INFORMATION

Use SCBA or air line respirators when CO_2 has been released and has diminished the oxygen content below 19%. Use insulated gloves when handling liquid, gas, or solid, along with a full face shield and eye protection.

Storage Recommendations

Do not drop cylinders. Keep valve protection caps in place except when [illegible], [illegible] from direct heat or open flame. Refer to CGA-P1, "Safe Handl[illegible] Compressed Gases", or OSHA 1910 Subpart H and Subpart Z.

MATERIAL SAFETY DATA SHEET CCL-500 PAGE : 01

(038311-0592 -P0000584)

DATE OF ISSUE	SUPERSEDES
11/28/85	09/27/85

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS	TRADE NAME & SYNONYMS
N/A	CCL-500

CHEMICAL FAMILY	FORMULA
PETROLEUM	X<--MIXTURE

MANUFACTURERS NAME:
CERTIFIED LABS. DIV. OF NCH CORP.

ADDRESS (NUMBER, STREET, CITY, STATE & ZIP CODE)
BOX 152170
IRVING, TEXAS 75015

PREPARED BY:	PRODUCT CODE NUMBER	EMERGENCY TELEPHONE NUMBER
KEVIN UHL/T.S.CHEMIST	4027	214-438-4144 EXT. 013

SECTION II- HAZARDOUS INGREDIENTS

CHEMICAL NAME (INGREDIENTS)	HAZARD	TLV*	PEL*	CAS#
MOLYBDENUM DISULFIDE	SKIN IRR.	10MG/M3 T.	10MG/M3 T.	1317-33-5

SECTION III - PHYSICAL DATA

BOILING PT.(FAHRENHEIT)	600	SPEC GRAVITY (H2O=1)	N/A
VAPOR PRESSURE (MM HG)	10	COLOR	BLUE-GRAY
VAPOR DENSITY (AIR=1)	10	ODOR	PETROLEUM

CCL-500

(CONTINUED) SECTION III - PHYSICAL DATA PAGE : 02

PH @ 100%	N/A	CLARITY	OPAQUE
PERCENT, VOLATILE BY VOLUME (%)	1	EVAPORATION RATE (BU AC = 1)	N/A
SOLUBILITY IN WATER	NEGLIGIBLE		
VISCOSITY	VISCOUS		

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT (METHOD USED)	FLAMMABLE LIMITS	LEL	UEL
400 F T.O.C		N/A	N/A

EXTINGUISHING MEDIA "ALCOHOL" X<--FOAM X<--FOAM X<--CO2 X<--DRY CHEMICAL X<--WATER SPRAY <--OTHER

SPECIAL FIRE FIGHTING PROCEDURES
EVACUATE HAZARD AREA OF UNPROTECTED PERSONNEL. WEAR PROPER PROTECTIVE CLOTHING INCLUDING NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS COOL FIRE-EXPOSED CONTAINERS WITH WATER.

UNUSUAL FIRE & EXPLOSION HAZARDS
VAPORS ARE HEAVIER THAN AIR AND MAY ACCUMULATE IN LOW AREAS OR AREAS INADEQUATELY VENTILATED. VAPORS MAY ALSO TRAVEL ALONG THE GROUND TO BE IGNITED AT LOCATIONS DISTANT FROM THE HANDLING SITE.

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

NOT ESTABLISHED FOR MIXTURE. SEE SECTION II.

EFFECTS OF OVEREXPOSURE

- ACUTE - (SHORT TERM EXPOSURE)

CAN LEAD TO CENTRAL NERVOUS SYSTEM DEPRESSION WITH EFFECTS OF HEADACHE, DIZZINESS AND NAUSEA. EYE IRRITANT DEFATS SKIN WHICH CAN LEAD TO FURTHER IRRITATION. INHALATION MAY BE SLIGHTLY IRRITATING TO MUCOUS MEMBRANES. INGESTION MAY RESULT IN VOMITING. ASPIRATION MUST BE AVOIDED TO AVOID PNEUMONITIS.

- CHRONIC - (LONG TERM EXPOSURE)

MARKED IRRITATION OF SKIN AND EYE UPON CHRONIC OVER-EXPOSURE. INGESTION CAN LEAD TO LIVER AND KIDNEY DAMAGE.

PRIMARY ROUTE OF ENTRY: <-- INHALATION <-- INGESTION X<-- ABSORPTION

(CONTINUED) SECTION V-- HEAL HAZARD DATA PAGE : 03

EMERGENCY & FIRST AID PROCEDURES

INHALATION :
REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GIVE ARTIFICIAL RESPIRATION IF NOT BREATHING. GET MEDICAL ATTENTION.

EYE CONTACT:
FLUSH WITH WATER FOR 15 MINUTES WHILE HOLDING EYELDS OPEN. GET MEDICAL ATTENTION.

SKIN CONTACT:
WASH WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING AND SHOES; DO NOT REUSE UNTIL CLEANED. IF PERSISTENT IRRITATION OCCURES, GET MEDICAL ATTENTION.

INGESTION :
DO NOT INDUCE VOMITING. IF VOMITING OCCURS SPONTANEOUSLY, KEEP HEAD BELOW HIPS TO PREVENT ASPIRATION OF LIQUID INTO THE LUNGS. GET MEDICAL ATTENTION.

NOTES TO PHYSICIAN :
N/A

SECTION VI - TOXICITY INFORMATION

N/A

SECTION VII - REACTIVITY DATA

	STABLE	UNSTABL	CONDITIONS TO AVOID
STABILITY	X		

N/A

INCOMPATIBILITY (MATERIALS TO AVOID)

STRONG OXIDIZERS.

HAZARDOUS DECOMPOSITION PRODUCTS

CARBON MONOXIDE

	WILL NOT OCCUR	MAY OCCUR	CONDITIONS TO AVOID
HAZARDOUS POLYMERIZATION	X		

CCL-500

SECTION VIII - SPILL OR LEAK PROCEDURES PAGE 04

STEPS TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
ELIMINATE ALL SOURCES OF IGNITION. SMALL SPILLS: TAKE UP WITH ABSORBANT AND PLACE IN LABELED CONTAINER FOR DISPOSAL. LARGE SPILLS: EVACUATE AREA OF UNPROTECTED PERSONNEL. STOP LEAK AND CONTAIN SPILL. REMOVE VIA VACUUM TRUCKS. TAKE UP REMAINDER WITH ABSORBANT AND PLACE IN LABELED CONTAINER FOR DISPOSAL. DO NOT FLUSH TO SEWER.

WASTE DISPOSAL METHOD
PLACE IN A DISPOSAL FACILITY APPROVED UNDER RCRA REGULATIONS FOR HAZARDOUS WASTE. USE NON-LEAKING CONTAINERS. SEAL TIGHTLY AND LABEL PROPERLY.

NEUTRALIZING AGENT
N/A

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION
GENERAL EXHAUST IS ADEQUATE UNDER NORMAL CIRCUMSTANCES.

RESPIRATORY PROTECTION
TYPICAL USE DOES NOT REQUIRE RESPIRATORS. HOWEVER, IN EMERGENCY SITUATIONS WHERE EXPOSURE EXCEEDS OSHA STANDARDS: IDLH 5000PPM = CCROVF

PROTECTIVE GLOVES
PVC GLOVES.

EYE PROTECTION
CHEMICAL GOGGLES ARE RECOMMENDED DEPENDING UPON SEVERITY OF EXPOSURE

OTHER PROTECTION
SHOES OR BOOTS.

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE	INDOOR	HEATED	REFRIGERATED	OUTDOOR
120 F <--MAX 32 F <--MIN	X			X

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
STORE IN MODERATE TEMPERATURES

OTHER PRECAUTIONS
KEEP OUT OF REACH OF CHILDREN.
READ ENTIRE LABEL BEFORE USING PRODUCT

CCL-500

SECTION XI - TRAN TATION (FOR FUT SE) PAGE : 05

APPLICABLE REGULATIONS
<--49 CFR <--IMCO <--TARIFF 6 D <--IATA <--MILITARY AIR (AFR 71-4)

SHIPPING NAME

HAZARD CLASS | ID NUMBER | REPORT QTY

LABELS | LIMITED QTY

UNIT CONTAINER

DOT SPS CONTAINER | NET EXPLOSIVE WT.

AEROSOL PROPELLANT(S)

SECTION XII - REFERENCES

1. VENDOR'S MSDS.

CERTIFIED LABS. DIV. OF NCH CORP. ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE TO VENDEES, USER OR THIRD PARTIES CAUSED BY THE MATERIAL. SUCH VENDEES OR USERS ASSUME ALL RISKS ASSOCIATED WITH THE USE OF THE MATERIAL

MATERIAL SAFETY DATA SHEET — COMMAND AEROSOL — PAGE - 01

CHEMICAL EMERGENCY — 1 DATE OF ISSUE 10/22/87 — SUPERSEDES 12/1/86

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS: NA
TRADE NAME & SYNONYMS: COMMAND AEROSOL

CHEMICAL FAMILY: AEROSOL PETROLEUM LUBRICANT
FORMULA: X --MIXTURE

MANUFACTURER'S NAME: CASTROL LABS. DIV OF NCH CORP
ADDRESS NUMBER, STREET, CITY, STATE & ZIP CODE: 2001 153170, DYNAS, TEXAS 75015

PREPARED BY: T S VAN UNA
PRODUCT CODE NUMBER: 9071
EMERGENCY TELEPHONE NUMBER: 310-630-4100 EXT 012

SECTION II - HAZARDOUS INGREDIENTS

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS AS THE PRODUCT FORMULATION HAS NOT BEEN TESTED AS A WHOLE

CHEMICAL NAME INGREDIENTS	HAZARD	TLV-	PEL-	CAS#
1,1,1-TRICHLOROETHANE	IRRITANT INSPIRM	350PPM	350PPM	71-55-6
ALIPHATIC PETROLEUM DISTILLATE	COMBUST VISCPPM	300MG/M3	500MG/M3	8032-32-4

SECTION III - PHYSICAL DATA

BOILING PT (FAHRENHEIT): 180 — SPEC GRAVITY (H2O=1): 0.75
VAPOR PRESSURE (MM HG): 100 — COLOR: BLUE GREEN
VAPOR DENSITY (AIR=1): 3.3 — ODOR: SOLVENT ODOR

COMMAND AEROSOL

CONTINUED — SECTION IV - HAZARDOUS DATA — PAGE - 02

FLASH POINT: NA — METHOD: NA — FLAMMABILITY GRADE: 0
PERCENT VOLATILE BY VOLUME (%): 70 — EVAPORATION RATE: 5 (BU AC = 1)
SOLUBILITY IN WATER: NEGLIGIBLE
APPEARANCE: PERFUME

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT METHOD USED: 120 F COC
FLAMMABLE LIMITS: LEL NA, UEL NA
ESTINGUISHING MEDIA: "ALCOHOL" --FOAM X --FOAM X --CO2 X --CHEMICAL --SPRAY --OTHER: DRY, WATER
SPECIAL FIRE FIGHTING PROCEDURES
SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACE PIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE

UNUSUAL FIRE & EXPLOSION HAZARDS
SPRAY WATER ON AEROSOL CONTAINERS TO COOL THEM, TO AVOID RUPTURING OF THE CONTAINERS

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE
NOT ESTABLISHED FOR MIXTURE SEE SECTION II

EFFECTS OF OVEREXPOSURE
- ACUTE - SHORT TERM EXPOSURE
CAN LEAD TO CENTRAL NERVOUS SYSTEM DEPRESSION WITH EFFECTS OF HEADACHE DIZZINESS AND NAUSEA AND LOSS OF CONSCIOUSNESS
EYE IRRITANT DEFATS SKIN WHICH CAN LEAD TO IRRITATION. INHALATION MAY BE SLIGHTLY IRRITATING TO MUCOUS MEMBRANE. INGESTION MAY RESULT IN VOMITING. ASPIRATION MUST BE AVOIDED TO AVOID PNEUMONITIS
- CHRONIC - LONG TERM EXPOSURE
MARKED IRRITATION OF SKIN AND EYE UPON CHRONIC OVEREXPOSURE AS WELL AS TO LIVER AND KIDNEY DAMAGES. TARGET ORGANS: LIVER AND KIDNEY
PRIMARY ROUTE OF ENTRY: X -- INHALATION -- INGESTION X -- ABSORPTION

COMMAND AEROSOL

CONTINUED — SECTION V - HEALTH HAZARD DATA — PAGE 03

EMERGENCY & FIRST AID PROCEDURES
INHALATION
REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GIVE ARTIFICIAL RESPIRATION IF NOT BREATHING. GET MEDICAL ATTENTION
EYE CONTACT
FLUSH WITH WATER FOR 15 MINUTES WHILE HOLDING EYELIDS OPEN. GET MEDICAL ATTENTION
SKIN CONTACT
WASH WITH SOAP AND WATER. IF IRRITATION DEVELOPS, SEEK MEDICAL ATTENTION
INGESTION
DO NOT INDUCE VOMITING. IF SPONTANEOUS VOMITING OCCURS, KEEP HEAD BELOW HIPS TO PREVENT ASPIRATION OF LIQUID INTO THE LUNGS. GET MEDICAL ATTENTION
NOTES TO PHYSICIAN
NA

SECTION VI - TOXICITY INFORMATION

1,1,1-TRICHLOROETHANE
ORL-HUMAN TDLO (PROPANOL TRACE) :
ORL-HUMAN TDLO (PROPANOL TRACE) :
ORL-RAT LD50 18 (MMHG) :
ALIPHATIC PETROLEUM DISTILLATE
ORL-MAN LDLO (TOXICOL) :
ORL-RAT LD50 (SOCAL) :
ORL-RAT LD50 (SOCAL) :

SECTION VII - REACTIVITY DATA

STABILITY: X --STABLE --UNSTABLE - CONDITIONS TO AVOID
NA
INCOMPATIBLE MATERIALS TO AVOID
STRONG OXIDIZING AGENTS
HAZARDOUS DECOMPOSITION PRODUCTS
CARBON MONOXIDE
HAZARDOUS POLYMERIZATION: WILL NOT X --OCCUR; MAY --OCCUR — CONDITIONS TO AVOID

COMMAND AEROSOL

SECTION VIII - SPILL OR LEAK PROCEDURES — PAGE - 04

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
ELIMINATE ALL SOURCES OF IGNITION. SMALL SPILLS: TAKE UP WITH ABSORBANT AND PLACE IN LABELED CONTAINER FOR DISPOSAL. LARGE SPILL: EVACUATE AREA OF UNPROTECTED PERSONNEL. STOP LEAK & CONTAIN SPILL. REMOVE VIA VACUUM TRUCKS. TAKE UP REMAINDER WITH ABSORBANT AND PLACE IN LABELED CONTAINER FOR DISPOSAL. DO NOT FLUSH TO SEWER. ARRANGE FOR SPILL IS UNLIKELY
WASTE DISPOSAL METHOD
DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE OR FEDERAL REGULATIONS CONCERNING HEALTH AND POLLUTION
NEUTRALIZING AGENT
NA

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION
GENERAL EXHAUST IS ADEQUATE UNDER NORMAL CIRCUMSTANCES
RESPIRATORY PROTECTION
TYPICAL USE DOES NOT REQUIRE RESPIRATOR. HOWEVER IN EMERGENCY SITUATIONS WHERE EXPOSURE EXCEEDS OSHA STANDARDS, USE A RESPIRATOR APPROVED FOR PROTECTION AGAINST ORGANIC VAPORS
PROTECTIVE GLOVES
PVC GLOVES TO MINIMIZE SKIN CONTACT
EYE PROTECTION
CHEMICAL GOGGLES ARE RECOMMENDED DEPENDING UPON SEVERITY OF EXPOSURE
OTHER PROTECTION
NA

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE: 100 F --MAX 32 F --MIN X; INDOOR X; HEATED; REFRIGERATED; OUTDOOR
CAUTIONS TO BE TAKEN IN HANDLING & STORING
STORE AT MODERATE TEMPERATURES
OTHER PRECAUTIONS
KEEP OUT OF REACH OF CHILDREN. READ ENTIRE LABEL BEFORE USING PRODUCT

COMMENTS AL

SECTION XI - TRANSPORTATION - (FOR FUTURE USE) PAGE : [illegible]

APPLICABLE REGULATIONS
--[illegible] --[illegible] --TARIFF [illegible] --IATA --MILITARY AIR [illegible]

SHIPPING NAME

HAZARD CLASS [illegible] REPORT QTY

LABELS LIMITED QTY

UNIT CONTAINER

DOT SPS CONTAINER NET EXPLOSIVE WT

ADVISOR PROPELLANTS

SECTION XII - REFERENCES

1. THRESHOLD LIMIT VALUE FOR CHEMICAL SUBSTANCES IN THE WORK ENVIRONMENT, [illegible] EDITION, ADOPT [illegible]
2. VENDOR'S MSDS
3. DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, 6TH EDITION, [illegible]

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

CERTIFIED LAVS, DIV. OF NEW DEPT. ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE, STORAGE OR DISPOSAL OF THE PRODUCT IN A MANNER NOT RECOMMENDED ON THE PRODUCT LABEL. USERS ASSUME ALL RISKS ASSOCIATED WITH SUCH UNRECOMMENDED USE, STORAGE, OR DISPOSAL OF THE PRODUCT.

MATERIAL SAFETY DATA SHEET -41-

Product Name:

CRYO-TEK

DATE PREPARED 06/18/86 DATE ISSUED

ISSUED TO:

PASSAIC FACTORY
FOR DISTRIBUTION

SECTION 1

HERCULES®

MATERIAL SAFETY INFORMATION SERVICE

Hercules Chemical Company, Inc.
29 West 38 Street • New York, NY 10018-5595
Information Phone 212-869-4330 – Ext 225

SECTION 2 — HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

HAZARDOUS COMPONENTS (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	OTHER LIMITS RECOMMENDED	% (OPTIONAL)
This product is not classified as hazardous in accordance with OSHA 1910.1200				

SECTION 3 — PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT	SPECIFIC GRAVITY (H2O = 1)	VAPOR DENSITY (AIR = 1)
285 deg.F	1.04	2.62

VAPOR PRESSURE (mm Hg.)	MELTING POINT	EVAPORATION RATE (Butyl Acetate = 1)
at 20 deg.C 0.22	N/A	N/A

SOLUBILITY IN WATER: Soluble

APPEARANCE & ODOR: Blue liquid. Odorless.

SECTION 4 — FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	FLAMMABLE LIMITS	LEL	UEL
N/A	None	N/A	N/A

EXTINGUISHING MEDIA: Water fog, alcohol, dry chemical

SPECIAL FIRE FIGHTING PROCEDURES: None

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

SECTION 5 — REACTIVITY DATA

STABILITY	CONDITIONS TO AVOID
STABLE	None

INCOMPATIBILITY (MATERIALS TO AVOID): Oxidizing materials

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: None

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 6 — HEALTH HAZARD DATA

ROUTES OF ENTRY	INHALATION?	SKIN?	INGESTION?
	N/A	N/A	N/A

HEALTH HAZARDS (ACUTE AND CHRONIC)

Very low single dose oral toxicity; eye and skin essentially no effect.

CARCINOGENICITY:	NTP?	IARC MONOGRAPHS?	OSHA REGULATED?
	NO	NO	NO

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SIGNS AND SYMPTOMS OF EXPOSURE
None

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE
None

EMERGENCY AND FIRST AID PROCEDURES
EYE & SKIN CONTACT: Like with all foreign material, flushing and washing with water is good safety and hygienic practice. INGESTION: low in toxicity; induce vomiting if large amounts are ingested.

SECTION 7 — PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Cover with absorbent material; let it soak and sweep up.

WASTE DISPOSAL METHOD
Incinerate or bury (landfill) away from water supplies in accordance with local regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
None

OTHER PRECAUTIONS None

SECTION 8 — CONTROL MEASURES

RESPIRATORY PROTECTION (SPECIFY TYPE)
None required

VENTILATION	LOCAL EXHAUST	Adequate	SPECIAL	N/A
	MECHANICAL (GENERAL)	N/A	OTHER	N/A

PROTECTIVE GLOVES None required
EYE PROTECTION If possiblility of splashing, use safety goggles.
OTHER PROTECTIVE CLOTHING OR EQUIPMENT None
WORK/HYGIENIC PRACTICES
Wash after handling.

N/A

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MATERIAL SAFETY DATA SHEET BARATHONE ARMOR PAGE - 01

[illegible] -0037 DATE OF ISSUE [illegible] SUPERSEDES [illegible]

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS TRADE NAME & SYNONYMS
NA BARATHONE ARMOR

CHEMICAL FAMILY FORMULA
MOISTURE DISPLACER A --MIXTURE

MANUFACTURER'S NAME
CENTURY LABS, DIV OF NCH CORP

ADDRESS (NUMBER, STREET, CITY, STATE & ZIP CODE)
BOX 152170
IRVING, TEXAS 75015

PREPARED BY PRODUCT CODE NUMBER EMERGENCY TELEPHONE NUMBER
RICHARD STOLLETT S CHEM 5037 214-438-4148 EXT 613

SECTION II - HAZARDOUS INGREDIENTS

THE HAZARDS INDICATED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS AS THE PRODUCT MIXTURE HAS NOT BEEN TESTED AS A WHOLE

CHEMICAL NAME INGREDIENTS	HAZARD	TLV	PEL	CAS#
ALIPHATIC PETROLEUM DISTILLATE	CONSIST	100PPM 1	300PPM 1	8032-32-4
1,1,1 TRICHLOROETHANE	IRRITANT	350PPM 2	350PPM 2	71-55-6

SECTION III - PHYSICAL DATA

BOILING PT (FAHRENHEIT) 160 SPEC GRAVITY (H2O=1) 0.98

VAPOR PRESSURE (MM HG) 95 COLOR LIGHT AMBER

BARATHONE ARMOR

CONTINUED SECTION III - PHYSICAL DATA PAGE - 02

VAPOR DENSITY (AIR=1) NA ODOR CHLORINATED

PH 0 100% NA CLARITY SLIGHTLY OPAQUE

PERCENT VOLATILE BY VOLUME (%) 90 EVAPORATION RATE (BU AC = 1) 0.75

SOLUBILITY IN WATER INSOLUBLE

VISCOSITY NON-VISCOUS

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT METHOD USED FLAMMABLE LIMITS LEL UEL
110 F TCC Not Not

EXTINGUISHING MEDIA "ALCOHOL" DRY WATER
R --FOAM --FOAM R --CO2 R --CHEMICAL --SPRAY --OTHER

SPECIAL FIRE FIGHTING PROCEDURES
USE WATER IN FINE SPRAY TO COOL UNOPENED CONTAINERS TO PREVENT BURSTING FROM EXCESSIVE PRESSURE. SELF-CONTAINED BREATHING APPARATUS AND RUBBER PROTECTIVE CLOTHING SHOULD BE WORN

UNUSUAL FIRE & EXPLOSION HAZARDS
HIGH CONCENTRATION IN CLOSED AREAS CAN BURN. FLAME OR ARC SHOULD NOT BE USED IN CLOSED AREAS UNDER SPECIFIC CONDITIONS PHOSGENE GAS FORMS

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

NOT ESTABLISHED FOR MIXTURE SEE SECTION II

EFFECTS OF OVEREXPOSURE
- ACUTE - (SHORT TERM EXPOSURE)
IRRITATING TO SKIN EYES AND MUCOUS MEMBRANES SKIN EXPOSURE - LOCAL IRRITATION POSSIBLE FOLLOWED BY TOXIC EFFECTS INHALATION - EUPHORIA HEADACHE DIZZINESS AND BURNING SENSATION IN CHEST INGESTION - IRRITATION OF MOUTH THROAT AND ESOPHAGUS TOXIC EFFECTS OF NAUSEA RAPID BREATHING SHORTNESS EYE EXPOSURE - LOCAL IRRITATION
- CHRONIC - (LONG TERM EXPOSURE)
TOXIC BY PROLONGED INHALATION TOXIC BY PROLONGED CONTACT WITH SKIN OR MUCOUS MEMBRANES MAJOR RESPONSE IS CENTRAL NERVOUS SYSTEM DEPRESSION CAN CAUSE EYE DAMAGE

BARATHONE ARMOR

CONTINUED SECTION V - HEALTH HAZARD DATA PAGE - 03

TARGET ORGANS OR TEST ANIMALS - LUNGS KIDNEYS AND LIVER

PRIMARY ROUTE OF ENTRY -- INGESTION -- ABSORPTION

EMERGENCY & FIRST AID PROCEDURES
INHALATION
MOVE TO FRESH AIR AND TREAT SYMPTOMATICALLY. GIVE OXYGEN IF BREATHING IS DIFFICULT. GIVE ARTIFICIAL RESPIRATION IF BREATHING STOPS. SEEK MEDICAL ATTENTION IMMEDIATELY

EYE CONTACT
FLUSH WITH LARGE AMOUNTS OF WATER FOR 15 MINUTES LIFTING UPPER AND LOWER EYELIDS OCCASIONALLY. GET MEDICAL ATTENTION IF IRRITATION PERSIST

SKIN CONTACT
WASH WITH SOAP AND WATER. APPLY EMOLLIENT RICH CREAM IF IRRITATION DEVELOPS. SEEK MEDICAL ATTENTION

INGESTION
DO NOT INDUCE VOMITING IF VOMITING OCCURS KEEP HEAD BELOW HIPS TO PREVENT ASPIRATION OF LIQUID INTO LUNGS. GET MEDICAL ATTENTION IMMEDIATELY

NOTES TO PHYSICIAN
DEPENDING ON THE AMOUNT INGESTED AND RETAINED AS WELL AS THE TOXICITY OF THE PRODUCT GASTRIC LAVAGE SHOULD BE USED TO AVOID ASPIRATION IF CONSIDERED. A CUFFED ENDOTRACHEAL TUBE WILL PREVENT ASPIRATION. CONSULT A POISON CONTROL CENTER

SECTION VI - TOXICITY INFORMATION

ALIPHATIC PETROLEUM DISTILLATE
RAT-ORAL SEC MEDIAN (MG/KG)
LOW-ORAL TOXIC ATTENDING
RAT-ORAL LD50 (MG/KG)
1,1,1 TRICHLOROETHANE
LOW-ORAL TOXIC ATTENDING TRACTION
HIGH-ORAL TOXIC ATTENDING TRACTION
ORAL-RAT LD50 10,000 (MG/KG)

SECTION VII - REACTIVITY DATA

STABILITY X --STABLE --UNSTABLE CONDITIONS TO AVOID

CONDITIONS TO AVOID

INCOMPATIBILITY (MATERIALS TO AVOID)
STRONG ALKALIS ACIDS AND SELECTED AMINE

BARATHONE ARMOR

CONTINUED SECTION VII - REACTIVITY DATA PAGE - 04

HAZARDOUS DECOMPOSITION PRODUCTS
CAN AT DECOMPOSITION TEMPERATURE RELEASE CARBON DIOXIDE, CARBON MONOXIDE HYDROGEN CHLORIDE AND PHOSGENE

	WILL NOT	MAY	CONDITIONS TO AVOID
HAZARDOUS	X --OCCUR	--OCCUR	

POLYMERIZATION NA

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
REMOVE ALL SOURCES OF IGNITION. PREVENT FROM ENTERING SEWERS OR WATER SOURCES. VENTILATE ENCLOSED SPACE. WEAR RESPIRATOR. CLEAN UP WITH ELECTRIC CLEANING EQUIPMENT-MUST BE EXPLOSION PROOF; OR SOAK UP WITH SAND, COTTON WASTE OR OTHER ABSORBANT MATERIAL

WASTE DISPOSAL METHOD
THE WASTE LIQUIDS SHOULD BE SENT TO A LICENSED REDLANDS OR INCINERATED AT A LICENSED INCINERATION CONSULT FEDERAL, STATE AND LOCAL POLLUTION REGULATIONS FOR COMPLETE DISPOSAL INFORMATION

NEUTRALIZING AGENT
NA

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION
LOCAL EXHAUST VENTILATION SUFFICIENT TO MAINTAIN AVERAGE CONCENTRATION BELOW PERMISSIBLE EXPOSURE LIMITS

RESPIRATORY PROTECTION
TYPICAL USE OF THE PRODUCT DOES NOT REQUIRE THE USE OF A RESPIRATOR. USE WITH ATTENTION MASK IF VAPORS. IN CASE OF AN EMERGENCY THE FOLLOWING RESPIRATOR IS RECOMMENDED
- SEE ITEM CORRECT
NIOSH ITEM: AMMONIA-ACIDGAS
0 ITEM SAM - FOR OT
ESCAPE CARTRIDGES

PROTECTIVE GLOVES
NITRIL TYPE OR EQUIVALENT

EYE PROTECTION
CHEMICAL GOGGLES SHOULD BE WORN DEPENDING UPON SEVERITY OF EXPOSURE

BAKATHEN / SL

CONTINUED — SECTION VI - SPECIAL HEALTH INFORMATION/PAGE - 09

OTHER PROTECTION
NA

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE — INDOOR — HEATED — REFRIGERATED — OUTDOOR
120 F --MAX 32 F --MIN X

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
KEEP AWAY FROM IGNITION SOURCES
STORE IN A COOL DRY PLACE

OTHER PRECAUTIONS
KEEP OUT OF REACH OF CHILDREN READ
BEFORE LABEL BEFORE USE

SECTION XI - TRANSPORTATION - FOR FUTURE USED

APPLICABLE REGULATIONS
--DOT --IATA --IMDG --TARIFF 5 D --IATA --MILITARY AIR LAFR 71-8

SHIPPING NAME

HAZARD CLASS — ID NUMBER — REPORT QTY

LABELS — LIMITED QTY

UNIT CONTAINER

BOX — SPS CONTAINER — NET EXPLOSIVE WT

APPROVAL PROPELLANT/ID

SECTION XX - REFERENCES

1 VENDOR'S MSDS
2 THRESHOLD LIMIT VALUE FOR CHEMICAL SUBSTANCES IN THE WORK ENVIRONMENT 2ND EDITION ACGIH 1985

BAKATHEN ADHESIVE

CONTINUED — SECTION XX - REFERENCES — PAGE - 09

3 NIOSH REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES 1985

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION. HOWEVER NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF

CONTROL LABS. DIV. OF NEW CORP ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE STORAGE OR DISPOSAL OF THE PRODUCT IN A MANNER NOT RECOMMENDED ON THE PRODUCT LABEL USERS ASSUME ALL RISKS ASSOCIATED WITH SUCH UNRECOMMENDED USE, STORAGE, OR DISPOSAL OF THE PRODUCT

MATERIAL SAFETY DATA SHEET : FAST-ACT PAGE : 01

(025280-0145 -P0000584-4079) DATE OF ISSUE 11/11/87 | SUPERSEDES 12/03/85

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS
N/A

TRADE NAME & SYNONYMS
FAST-ACT

CHEMICAL FAMILY
QUATERNARY AMMONIUM CHLORIDE

FORMULA
X<--MIXTURE

MANUFACTURERS NAME:
CERTIFIED LABS. DIV. OF NCW CORP.

ADDRESS (NUMBER, STREET, CITY, STATE & ZIP CODE)
BOX 152170
IRVING, TEXAS 75015

PREPARED BY:
MARK COHEN/T.S. CHEMIST

PRODUCT CODE NUMBER
4079

EMERGENCY TELEPHONE NUMBER
214-438-1381

SECTION II- HAZARDOUS INGREDIENTS

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS AS THE PRODUCT MIXTURE HAS NOT BEEN TESTED AS A WHOLE.

CHEMICAL NAME (INGREDIENTS)	HAZARD	TLV*	PEL*	CAS#
NO HAZARDOUS INGREDIENTS				
PER 29 CFR 1910.1200				

SECTION III - PHYSICAL DATA

BOILING PT.(FAHRENHEIT)	N/A	SPEC GRAVITY (H2O=1)	N/A
VAPOR PRESSURE (MM HG)	N/A	COLOR	WHITE
VAPOR DENSITY (AIR=1)	N/A	ODOR	NONE

FAST-ACT

(CONTINUED) SECTION III - PHYSICAL DATA PAGE : 02

PH @ 100%	N/A	CLARITY	N/A
PERCENT VOLATILE BY VOLUME (%)	N/A	EVAPORATION RATE (BU AC = 1)	N/A
SOLUBILITY IN WATER	APPRECIABLE		
VISCOSITY			

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT (METHOD USED) N/A	FLAMMABLE LIMITS	LEL N/A	UEL N/A

EXTINGUISHING MEDIA "ALCOHOL"
<--FOAM <--FOAM <--CO2 DRY <--CHEMICAL WATER <--SPRAY <--OTHER

SPECIAL FIRE FIGHTING PROCEDURES

WEAR SELF-CONTAINED BREATHING APPARATUS

UNUSUAL FIRE & EXPLOSION HAZARDS

PRODUCT IS NOT FLAMMABLE BUT EMITS IRRITATING FUMES IF HEATED TO DECOMPOSITION.

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

NOT ESTABLISHED FOR MIXTURE - SEE SECTION II.

EFFECTS OF OVEREXPOSURE

ACUTE - (SHORT TERM EXPOSURE)

EYES - EYE CONTACT WITH POWDER CAN BE EXTREMELY IRRITATING CAUSING TEARS, REDNESS AND INFLAMMATION.
INGESTION - INGESTION OF PELLETS CAN CAUSE NAUSEA, DIZZINESS, VOMITING, ETC.

CHRONIC - (LONG TERM EXPOSURE)

EYES - LONG TERM REPEATED EYE CONTACT ALTHOUGH VERY UNLIKELY COULD CAUSE SEVERE IRRITATION AND CONJUNCTIVITIS.

PRIMARY ROUTE OF ENTRY <--INHALATION <--INGESTION X--ABSORPTION

EMERGENCY & FIRST AID PROCEDURES
INHALATION
INHALATION NOT POSSIBLE DUE TO NATURE OF PRODUCT.

FAST-ACT

(CONTINUED) SECTION V - HEALTH HAZARD DATA PAGE 03

EYE CONTACT:
FLUSH WITH WATER FOR 15 MINUTES HOLDING LIDS OPEN. SEEK MEDICAL ATTENTION IF IRRITATION DEVELOPS.

SKIN CONTACT:
WASH WITH SOAP AND WATER.

INGESTION :
CALL A PHYSICIAN AT ONCE. GIVE SEVERAL GLASSES OF WATER AND INDUCE VOMITING.

NOTES TO PHYSICIAN :
DUE TO FACT THAT PRODUCT IS A PELLET, EYE CONTACT OR INHALATION IS VERY UNLIKELY.

SECTION VI - TOXICITY INFORMATION

SECTION VII - REACTIVITY DATA

STABILITY	X<--STABLE	<--UNSTABL	CONDIDTIONS TO AVOID
	N/A		

INCOMPATIBILITY (MATERIALS TO AVOID)
N/A

HAZARDOUS DECOMPOSITION PRODUCTS
OXIDES OF NITROGEN, AMMONIA, OR OXIDES OF BORON.

HAZARDOUS POLYMERIZATION	WILL NOT X <--OCCUR	MAY <--OCCUR	CONDITIONS TO AVOID

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
PICK UP PELLETS FROM ANY BROKEN PACKAGES WITH BROOM AND DUST PANT.
WEAR GLOVES AND DUST MASK IF DUSTING OCCURS.

WASTE DISPOSAL METHOD
LANDFILL IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS.

FAST-ACT

(CONTINUED) SECTION VIII - SPILL OR LEAK PROCEDURES PAGE 04

NEUTRALIZING AGENT
N/A

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION
LOCAL EXHAUST IS ADEQUATE.

RESPIRATORY PROTECTION
NOT REQUIRED EXCEPT IN CASE OF A SPILL WHICH RESULTS IN DUST. IN CASE OF DUST, USE NIOSH APPROVED DUST MASK.

PROTECTIVE GLOVES
WEAR RUBBER GLOVES IF PICKING UP PELLETS FROM BROKEN CONTAINERS.

EYE PROTECTION
NOT NORMALLY REQUIRED.

OTHER PROTECTION
NOT NORMALLY REQUIRED.

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE 180 F <--MAX N/A <--MIN	INDOOR X	HEATED	REFRIGERATED	OUTDOOR

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
NO SPECIAL PRECAUTIONS REQUIRED.

OTHER PRECAUTIONS
READ ENTIRE LABEL BEFORE USING.
DO NOT REMOVE FROM PLASTIC PACKAGES.
KEEP AWAY FROM CHILDREN.

SECTION XI - TRANSPORTATION - (FOR FUTURE USE)

APPLICABLE REGULATIONS
<--49 CFR <--IMCO <--TARIFF 6 D <--IATA <--MILITARY AIR (AFR 71-4)

SHIPPING NAME

FAST-ACT

(CONTINUED) SECTION XI - TRA TATION - (FOR FUT USE) PAGE : 06

HAZARD CLASS	ID NUMBER	REPORT QTY
LABELS	LIMITED QTY	
UNIT CONTAINER		
DOT SPS CONTAINER	NET EXPLOSIVE WT.	
AEROSOL PROPELLANT(S)		

SECTION XII - REFERENCES

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

CERTIFIED LABS. DIV. OF NCH CORP. ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE, STORAGE OR DISPOSAL OF THE PRODUCT IN A MANNER NOT RECOMMENDED ON THE PRODUCT LABEL. USERS ASSUME ALL RISKS ASSOCIATED WITH SUCH UNRECOMMENDED USE, STORAGE, OR DISPOSAL OF THE PRODUCT.

MATERIAL SAFETY DATA SHEET FREE WAXBOOL PAGE : 01

[illegible] / DATE OF ISSUE 04/01/87 SUPERSEDES 0/00/00

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS: N/A
TRADE NAME & SYNONYMS: FREE WAXBOOL AEROSOL

CHEMICAL FAMILY: ALIPHATIC PETROLEUM DISTILLATE
FORMULA: A --MIXTURE

MANUFACTURER'S NAME
CERTIFIED LABS INC OF NEW YORK
ADDRESS (NUMBER, STREET, CITY, STATE & ZIP CODE)
BOX 15219
DONNA TEXAS 78572

PREPARED BY: RICHARD STOLLERY S.CHEM
PRODUCT CODE NUMBER: 0002
EMERGENCY TELEPHONE NUMBER: 1-16-630-4166 EXT 013

SECTION II - HAZARDOUS INGREDIENTS

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS AS THE PRODUCT MIXTURE HAS NOT BEEN TESTED AS A WHOLE

CHEMICAL NAME INGREDIENTS	HAZARD	TLV-	PEL-	CAS#
ALIPHATIC PETROLEUM DISTILLATE	CORRE	100 PPM 1	500PPM(1	8032-32-0
ETHYL ACETATE	FLAMMABL	400 PPM 1	400 PPM 1	141-78-0

SECTION III - PHYSICAL DATA

BOILING POINT (DEGREES F): 100
SPEC GRAVITY (H2O=1): 0.862

VAPOR PRESSURE (MM HG): N/A
COLOR: AMBER

VAPOR DENSITY (AIR=1): N/A
ODOR: VINEGAR

FREE WAXBOOL AEROSOL

CONTINUED: SECTION III - PHYSICAL DATA PAGE : 02

PH @ 100%: N/A
CLARITY: TRANSPARENT

PERCENT VOLATILE BY VOLUME (%): 98
EVAPORATION RATE: N/A (BU AC = 1)

SOLUBILITY IN WATER: MISCIBLE

VISCOSITY: NON-VISCOUS

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT (METHOD USED): TCC
FLAMMABLE LIMITS: LEL 3.3 UEL 11.0

EXTINGUISHING MEDIA: "ALCOHOL"
X --FOAM X --CO2 X --DRY CHEMICAL WATER SPRAY --OTHER

SPECIAL FIRE FIGHTING PROCEDURES
SPRAY WATER ON AEROSOL CONTAINERS TO COOL THEM. AVOIDING RUPTURING. WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE WHEN FIGHTING FIRES.

UNUSUAL FIRE & EXPLOSION HAZARDS
VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL TO AREAS BELOW THEIR HANDLING POINT. FLAME EXTENSION: 18" BURNBACK: 5 - 6 INCHES

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE
NOT ESTABLISHED FOR MIXTURE. SEE SECTION II

EFFECTS OF OVEREXPOSURE
- ACUTE - (SHORT TERM EXPOSURE)
SEVERE IRRITATION TO EYES, BURNING, TEARING AND BLURRED VISION CAUSES IRRITATION DEFATTING OF SKIN. EXCESSIVE BREATHING OF VAPORS CAN LEAD TO NASAL AND RESPIRATORY IRRITATION. DIZZINESS, WEAKNESS, NAUSEA AND POSSIBLE UNCONSCIOUSNESS. EVEN ASPIRATION, SWALLOWING CAN CAUSE NAUSEA, CRAMPS, VOMITING AND DIARRHEA. ASPIRATION OF MATERIAL INTO THE LUNGS CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL
- CHRONIC - (LONG TERM EXPOSURE)
CAUSES MARKED IRRITATION TO EYES AND MAY CAUSE CORNEAL CLOUDING. INTENSIVE OVEREXPOSURE TO SKIN CAN CAUSE DERMATITIS AND DRYNESS. HIGH CONCENTRATION CAN HAVE A NARCOTIC EFFECT AND CAUSE CONGESTION IN THE LUNGS AND KIDNEYS. TARGET ORGANS: LIVER AND KIDNEYS

FREE WAXBOOL AEROSOL

CONTINUED: SECTION V - HEALTH HAZARD DATA PAGE : 03

PRIMARY ROUTE OF ENTRY: X --INHALATION --INGESTION --ABSORPTION

EMERGENCY & FIRST AID PROCEDURES
INHALATION
GET PERSON OUT OF CONTAMINATED AREA TO FRESH AIR. IF BREATHING HAS STOPPED ARTIFICIAL RESPIRATION SHOULD BE STARTED. OXYGEN MAY BE ADMINISTERED. IF NEARBY AVAILABLE SEEK MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT
FLUSH WITH LARGE AMOUNTS OF WATER FOR 15 MINUTES. LIFTING UPPER AND LOWER LIDS OCCASIONALLY. GET MEDICAL ATTENTION IF IRRITATION PERSISTS. TREATMENT IS MOST EFFECTIVE WITHIN ONE MINUTE.

SKIN CONTACT
THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. LAUNDER CONTAMINATED CLOTHING BEFORE REUSE. APPLY EMOLLIENT CREAM.

INGESTION
DO NOT INDUCE VOMITING. KEEP PERSON WARM, QUIET AND GET MEDICAL ATTENTION. ASPIRATION OF MATERIAL INTO THE LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

NOTES TO PHYSICIAN
CASTOR LARGE OR MODERATE DO NOT INDUCE VOMITING. TREAT SYMPTOMATICALLY PROBABLY SECONDARY ANEMIA, LEUCOCYTOSIS AND CORNEAL SWELLING AND ATTY DEGENERATION OF KIDNEY.

SECTION VI - TOXICITY INFORMATION

ALIPHATIC PETROLEUM DISTILLATE
LD50-RAT LD50 = 17.75 MG/KG 4
ORAL-RAT LD50 = 30 GRS 4
ORAL-RABBIT LD50 = 20 GRS 4
ETHYL ACETATE
ORAL-RAT = 4.5 GRS 3
ORAL-RAT LD50 = 11 GRMS 3
INHALATION = 4000 PPM/8H 3

SECTION VII - REACTIVITY DATA

STABILITY: X --STABLE --UNSTABLE --CONDITIONS TO AVOID

AVOID HEAT SPARKS AND OPEN FLAME

INCOMPATIBLE MATERIALS TO AVOID

STRONG ACIDS, BASES AND OXIDIZING AGENTS

FREE WAXBOOL AEROSOL

CONTINUED: SECTION VII - REACTIVITY DATA PAGE : 04

HAZARDOUS DECOMPOSITION PRODUCTS

CARBON MONOXIDE UPON BURNING

	WILL NOT	MAY	CONDITIONS TO AVOID
HAZARDOUS	X --OCCUR	--OCCUR	

POLYMERIZATION
N/A

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
AEROSOL CONTAINER SO SPILL UNLIKELY. IN CASE OF LEAKAGE PICK UP WITH AN AEROSOLIZED SUCH AS PAPER TOWELS, ETC TO CONTAIN SPILL DO NOT FLUSH TO SEWER. PLACE INTO LABELED CONTAINERS AND SEAL. DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS. WET VACUUM AREA AFTER ALL TRACES HAVE BEEN CLEANED UP.

WASTE DISPOSAL METHOD
DO NOT INCINERATE OR PUNCTURE CAN. DISPOSE OF CAN ALONG WITH CONTAMINATED MATERIALS IN APPROVED SANITARY LANDFILL.

NEUTRALIZING AGENT
N/A

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION
LOCAL EXHAUST VENTILATION SUFFICIENT TO MAINTAIN WORKPLACE CONCENTRATION BELOW PERMISSIBLE EXPOSURE LIMITS

RESPIRATORY PROTECTION
TYPICAL USE OF THE PRODUCT DOES NOT REQUIRE THE USE OF A RESPIRATOR. USE WHEN APPROVED MASK IF MISTING. IN CASE OF AN EMERGENCY THE FOLLOWING RESPIRATOR IS RECOMMENDED:
1000 PPM CERCHAR
5000 PPM CHEM/SAFTGEAR
HEXE 3M 141 - 49 MM CT
ESCAPE CHEMCHEM

PROTECTIVE GLOVES
NEOPRENE OR NITRILE RUBBER GLOVES SHOULD BE WORN

EYE PROTECTION
CHEMICAL GOGGLES SHOULD BE WORN DEPENDING ON SEVERITY OF EXPOSURE

FREE WINDLY ASSOCIA

C ANTHRAX SECTION VII - SPECIAL PROTECTION INFORMATION PAGE - 05

OTHER PROTECTION
NA

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE INDOOR HEATED REFRIGERATED OUTDOOR
120 F --MAX 0 F --MIN X

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
STORE AT TEMPERATURES 120 F TO PREVENT
POSSIBILITY OF RUPTURE

OTHER PRECAUTIONS
KEEP OUT OF REACH OF CHILDREN READ ENTIRE
LABEL BEFORE USE INHALATE CONCENTRATION
AND INHALATION OF VAPORS CAN BE FATAL

SECTION XI - TRANSPORTATION - FOR FUTURE USE

APPLICABLE REGULATIONS
--49 CFR --IMCO --TARIFF 6 B --IATA --MILITARY AIR LAFS 71-0

SHIPPING NAME

HAZARD CLASS ID NUMBER REPORT QTY

LABELS LIMITED QTY

UNIT CONTAINER

DOT SPS CONTAINER NET EXPLOSIVE WT

AEROSOL PROPELLANTS

SECTION XII - REFERENCES

1 VENDOR'S MSDS SHEET
2 NIOSH POCKET GUIDE TO CHEMICAL HAZARDS 1978

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CONTINUED SECTION XII - REFERENCES PAGE - 06

3. DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS 5TH EDITION
4. VINING SAX
5. NIOSH REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES, 1983

NOTE: N A- REPRESENTS THE NON-APPLICABLE NATURE OF THIS SECTION WITH RESPECT TO THIS PRODUCT
N E- REPRESENTS THE FACT THAT THE INFORMATION HAS YET TO BE ESTABLISHED

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ALLIED

PRODUCT SAFETY DATA SHEET

GENETRON® 12 dichlorodifluoromethane

A. GENERAL INFORMATION

✓ 12

TRADE NAME (COMMON NAME OR SYNONYM)	☒ C.A.S. NO. ☐ ALLIED PRODUCT CODE #
GENETRON® 12 dichlorodifluoromethane	75-71-8

CHEMICAL NAME
Dichlorodifluoromethane — Synonyms: Fluorocarbon 12, Refrigerant 12, Propellant 12.

FORMULA	MOLECULAR WEIGHT
CCl_2F_2	120.91

ADDRESS (No., STREET, CITY, STATE AND ZIP CODE)
ALLIED CORPORATION
CHEMICALS SECTOR
P.O. Box 1139R
Morristown, N.J. 07960

CONTACT	PHONE NUMBER	ISSUED DATE	REVISED DATE
Director, Product Safety	(201) 455-4157	Apr., 1979	Mar., 1982

B. FIRST AID MEASURES

EMERGENCY PHONE NUMBER
(201) 455-2000

Inhalation: Remove to fresh air. If breathing has stopped, give artificial respiration. Call a physician. Use oxygen as required provided a qualified operator is available. Do not give epinephrine (adrenalin).

Skin or eye contact: Immediately bathe any frostbite (do not rub) with lukewarm (not hot) water. Call a physician. In absence of water, cover with soft wool.

C. HAZARDS INFORMATION

HEALTH

INHALATION: This material is low in toxicity at concentrations as high as 4% (40,000 ppm). When oxygen levels in air are reduced to 12-14%, symptoms of asphyxiation, loss of coordination, increased pulse rate, cardiac sensitization, and deeper respiration will occur. Further, see Section K.

INGESTION
Not applicable (gaseous at normal temperature and pressure).

SKIN:
Contact with liquid can cause frostbite, indicated by pallor or reddish, loss of sensation, and swelling.

EYES:
Same as skin.

PERMISSIBLE CONCENTRATION: AIR (SEE SECTION J) — BIOLOGICAL
TWA: 1000 ppm (OSHA)
TLV: same (ACGIH)

UNUSUAL CHRONIC TOXICITY
See subacute data, Reference (g). 160

HAZARDS (Cont.)

FIRE AND EXPLOSION

FLASH POINT	AUTO IGNITION TEMPERATURE	FLAMMABLE LIMITS IN AIR (% BY VOL.)
N.A. °C (non-flammable) ☐OPEN CUP ☐CLOSED CUP	N.A. °C	LOWER (No flame observed up to 25 volume %) UPPER

UNUSUAL FIRE AND EXPLOSION HAZARDS

Liquid and gas under pressure.
Toxic decomposition products. See Section G.

PRECAUTIONS/PROCEDURES

FIRE EXTINGUISHING AGENTS RECOMMENDED

Not applicable

FIRE EXTINGUISHING AGENTS TO AVOID

SPECIAL FIRE FIGHTING PRECAUTIONS

Wear self-contained breathing apparatus approved by NIOSH. Keep cylinders cool with water spray.

VENTILATION

Local Exhaust: where leakage is probable.
Mechanical (General): adequate for other operating areas and for storage areas.

NORMAL HANDLING

Do not puncture or drop cylinders or expose to excessive heat. Use authorized containers only. Do not puncture tubing.

STORAGE

Cool, well-ventilated area away from heat or flame. Protect cylinder and its fittings from physical damage.
Details on storage: see Reference (a).

SPILL OR LEAK

If large quantity is released, evacuate personnel and allow to dissipate. Note Sections C and K for hazards involved.

SPECIAL PRECAUTIONS/PROCEDURES/LABEL INSTRUCTIONS

This product can cause death or serious personal injury if not handled properly. Follow OSHA regulations, References (1) and (3). For cylinder handling, see Reference (a). Label signal word: WARNING!

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION

Not generally required for normally vented situations. For unusual situations, wear supplied-air respirator or self-contained breathing apparatus. At high concentrations, add full facepiece. Either respirator should be NIOSH-approved.

EYES AND FACE

Chemical safety goggles if there is reasonable probability of contact with liquid. In this case, do not wear contact lenses.

HANDS, ARMS AND BODY

Protective gloves of PVA (2nd choice, neoprene) outer layer where leakage of liquid is reasonably probable. Impervious shoes and clothing where liquid leakage is probable. Both clothing and shoes should be thermally insulated to prevent freezing.

OTHER CLOTHING AND EQUIPMENT

Provide water source for first aid in case of frostbite (see Section B).

F. PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS):	APPEARANCE AND ODOR	
☐ LIQUID ☐ SOLID ☒ GAS	Colorless liquefied gas with faint ethereal odor. 15, 25, 30, 45, 50, 145, or 2000 lb. cylinder with green (nonflammable gas) label.	
BOILING POINT -29.7°C MELTING POINT -158°C	SPECIFIC GRAVITY (H_2O = 1) @ 21.1°C, liquid 1.325	VAPOR DENSITY (AIR = 1) @ 0°C, and 1 atm 4.28
SOLUBILITY IN WATER (% by Weight) 0.008 – Reference (b)	pH	VAPOR PRESSURE (mm Hg at 20°C) ☐ (PSIG) ☒ 70.3 psig @ 21.1°C
EVAPORATION RATE (Butyl Acetate = 1) ☐ (Ether = 1) ☐ N.A. (gas)	% VOLATILES BY VOLUME (At 20°C) N.A. (gas)	

G. REACTIVITY DATA

STABILITY	CONDITIONS TO AVOID
☐ UNSTABLE ☒ STABLE	Lighted cigarettes, hot spots, welding. Temperatures above 550°C. – Reference (c). Decomposes in fires.

INCOMPATIBILITY (MATERIALS TO AVOID)

Aluminum in the form of freshly abraded surface (strong exothermic reaction) – Reference (d) – or powder – Reference (b). Magnesium powder @ 400°C, ignites or with spark; explodes – Reference (d). Zinc powder. Reference (b). Chemically active metals such as sodium, potassium, or calcium – Reference (b).

HAZARDOUS DECOMPOSITION PRODUCTS

Halogens, halogen acids, and possibly carbonyl halides, such as phosgene.

HAZARDOUS POLYMERIZATION	CONDITIONS TO AVOID
☐ MAY OCCUR ☒ WILL NOT OCCUR	

H. HAZARDOUS INGREDIENTS (Mixtures Only) N.A.

MATERIAL OR COMPONENT/C.A.S. #	WT. %	HAZARD DATA (SEE SECT. J)
NOT APPLICABLE		

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E. ENVIRONMENTAL

DEGRADABILITY/AQUATIC TOXICITY	OCTANOL/WATER PARTITION COEFFICIENT
Aquatic toxicity: TLm96 over 1000 ppm — Reference (e).	

EPA HAZARDOUS SUBSTANCE? ☐ YES ☒ NO IF SO, REPORTABLE QUANTITY _____	40 CFR 116-117

WASTE DISPOSAL METHODS (DISPOSER MUST COMPLY WITH FEDERAL, STATE AND LOCAL DISPOSAL OR DISCHARGE LAWS)

Disposal of GENETRON 12 dichlorodifluoromethane may be subject to Federal regulations. Users of this product should review their operations, then consult with appropriate regulatory agencies before discharging or disposing of waste material.

RCRA STATUS OF UNUSED MATERIAL	40 CFR 261.33(f)
EPA Hazardous Waste No. U075 if discarded	

F. REFERENCES

PERMISSIBLE CONCENTRATION REFERENCES

(1) OSHA regulations for airborne contaminants, 29 CFR 1910.1000
(2) ACGIH 1981 list, "Threshold Limit Values for Chemical Substances"

REGULATORY STANDARDS	D.O.T. CLASSIFICATION Nonflammable gas	49 CFR

(3) OSHA regulations for compressed gases, 29 CFR 1910.101.

GENERAL (a) CGA Pamphlet P-1, "Safe Handling of Compressed Gases in Containers", 1974, Compressed Gas Association
(b) NIOSH/OSHA Manual, "Pocket Guide to Chemical Hazards", 1978, DHHS Pub No. 78-210, GPO
(c) Windholz, M., Editor, Merck Index, 9th Edition, 1976, Monograph 3036
(d) Bretherick, L., Handbook of Reactive Chemical Hazards, 2nd Edition, 1979, Butterworths, Boston
(e) NIOSH Registry, 1979, Accession No. PA 82 00 000
(f) Coast Guard CHRIS system form DCF, October, 1978
(g) AIHA Hygienic Guide, "Dichlorodifluoromethane", 1968, Am. Industrial Hygiene Assn., Akron 44311

G. ADDITIONAL INFORMATION

C. HAZARDS INFORMATION (continued)

Inhalation

A narcotic effect has been reported. Also, published animal studies report that cardiac arrhythmia and myocardial depression are produced in species as follows, if inhaled 5 minutes at varying concentrations.

Species	Minimum Inhaled Concentration (ppm)
Monkey	50,000–100,000
Mouse	over 400,000
Rat	over 400,000
Dog	100,000

(a) [illegible], et al., Toxicology 2, 381-395 (1974). (b) Aviado, D.M., Ibid 3, 321-332 (1975).

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ALLIED

PRODUCT SAFETY DATA SHEET

GENETRON® 22 chlorodifluoromethane

√ 13

A. GENERAL INFORMATION

TRADE NAME (COMMON NAME OR SYNONYM)	☒ C.A.S. NO. ☐ ALLIED PRODUCT CODE #
GENETRON® 22 chlorodifluoromethane	75-45-6

CHEMICAL NAME
Chlorodifluoromethane — Synonyms: fluorocarbon 22, refrigerant 22, propellant 22

FORMULA	MOLECULAR WEIGHT
$CHClF_2$	86.47

ADDRESS (No., STREET, CITY, STATE AND ZIP CODE)
ALLIED CORPORATION
CHEMICALS SECTOR
P.O. Box 1139R
Morristown, N.J. 07960

CONTACT	PHONE NUMBER	ISSUED DATE	REVISED DATE
Director, Product Safety	(201) 455-4157	May, 1979	March, 1982

B. FIRST AID MEASURES

EMERGENCY PHONE NUMBER
(201) 455-2000

Inhalation: Immediately remove to fresh air. If breathing has stopped, use artificial respiration. Use oxygen as required, provided a qualified operator is available. Do not give epinephrine (adrenalin). Call a physician.

Skin or Eye: Immediately bathe (do not rub) with lukewarm (not hot) water. Call a physician. In the absence of water, cover with soft wool.

C. HAZARDS INFORMATION

HEALTH

INHALATION: Acute toxicity is low at concentrations in air as high as 4% (40,000 ppm); but when oxygen levels in air are reduced to 12-14%, symptoms of asphyxiation, namely loss of coordination, increased pulse rate, and deeper respirations will occur. Narcotic effects seen at 200,000 ppm. Further, see Section K, which includes possible cardiac effects.

INGESTION:
Not applicable (gas).

SKIN:
Contact with liquid or gas [illegible] indicated by pallor or redness, loss of sensation, and swelling.

EYES:
Same as skin.

PERMISSIBLE CONCENTRATION, AIR (SEE SECTION J): None established by OSHA. BIOLOGICAL
TLV: 1000 ppm.

UNUSUAL CHRONIC TOXICITY:
See Section K.

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[illegible]

HAZARDS (Cont.)

FIRE AND EXPLOSION

FLASH POINT	AUTO IGNITION TEMPERATURE	FLAMMABLE LIMITS IN AIR (% BY VOL.)
N.A. °C (non-flammable) ☐ OPEN CUP ☐ CLOSED CUP	N.A. °C	LOWER N.A. UPPER

UNUSUAL FIRE AND EXPLOSION HAZARDS

GENETRON 22/air mixture under pressure: see Section K.
Toxic decomposition products: see Section G.

PRECAUTIONS/PROCEDURES

FIRE EXTINGUISHING AGENTS RECOMMENDED

Not applicable.

FIRE EXTINGUISHING AGENTS TO AVOID

SPECIAL FIRE FIGHTING PRECAUTIONS

Wear self-contained breathing apparatus approved by NIOSH. Keep cylinders with water spray.

VENTILATION

Local Exhaust: where leakage is probable.
Mechanical (General): adequate for storage areas.

NORMAL HANDLING

Do not breathe gas. Use only with adequate ventilation.
Do not puncture or drop cylinders or expose to excessive heat. Use authorized containers only.
Do not puncture tubing. See label for further instructions.

STORAGE

Cool, well-ventilated area away from heat or flame. Protect cylinder and its fittings from physical damage.
Details on storage: see CGA Pamphlet below.

SPILL OR LEAK

If large quantity is released, evacuate personnel and allow to dissipate. Note Sections C and K for hazards involved.

SPECIAL PRECAUTIONS/PROCEDURES/LABEL INSTRUCTIONS

This product can cause death or serious personal injury if not properly handled. Follow OSHA regulations for compressed gases and for airborne contaminants. For cylinder handling, also see Compressed Gas Association Pamphlet P-1, 1974. If use in pressure testing is contemplated, it is urgent to read limitation in Section K.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION

Not required for the usual well-vented situation. For emergencies or poorly vented situations, wear self-contained breathing apparatus or supplied-air respirator. Either should be approved by NIOSH.

EYES AND FACE

Chemical safety goggles if there is reasonable probability of eye contact with liquid.

HANDS, ARMS AND BODY

Protective gloves of PVA (second choice, neoprene) where leakage of liquid is reasonably probable.
Impervious shoes and clothing where liquid leakage is reasonably probable.

OTHER CLOTHING AND EQUIPMENT

Provide water source for first aid in case of frostbite (see Section B).

F. PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS):	APPEARANCE AND ODOR	
☐ LIQUID ☐ SOLID ☒ GAS ☐ _____	Colorless liquefied gas with faint ethereal odor. 15, 25, 30, 50 or 125 cylinder with green (nonflammable gas) label. Bulk with green (nonflammable gas) placard.	
BOILING POINT −40.7 °C MELTING POINT −160 °C	SPECIFIC GRAVITY (H_2O = 1) (liquid) @21.1°C. 1.21	VAPOR DENSITY (AIR = 1) (@ 0°C. and 1 atm) 3.11
SOLUBILITY IN WATER (% by Weight) 0.3 @ 25°C. and 1 atmosphere.	pH	VAPOR PRESSURE (mm Hg at 20° C) ☐ (PSIG) ☒ 121.4 @ 21.1°C.
EVAPORATION RATE (Butyl Acetate = 1) ☐ (Ether = 1) ☐ N.A. (gas)	% VOLATILES BY VOLUME (At 20° C) 100	

G. REACTIVITY DATA

STABILITY	CONDITIONS TO AVOID
☐ UNSTABLE ☒ STABLE	Flames, lighted cigarettes, hot spots, welding. Decomposes, yielding toxic gases.

INCOMPATIBILITY (MATERIALS TO AVOID) (1) Strong oxidants, including oxygen, greatly increase the risk of fire or explosion in case conditions should favor such. (2) Alkali metals such as sodium: cause exothermic reaction. (3) Alkali earth metals such as magnesium: cause exothermic reaction. (4) Freshly exposed aluminum surfaces, e.g. in mechanical devices, in grinding, abrasion, or comminution: cause exothermic reaction. – References (c) and (d).

HAZARDOUS DECOMPOSITION PRODUCTS

Halogens, halogen acids, carbon dioxide, carbon monoxide, and possibly carbonyl halides such as phosgene.

HAZARDOUS POLYMERIZATION	CONDITIONS TO AVOID
☐ MAY OCCUR ☒ WILL NOT OCCUR	

H. HAZARDOUS INGREDIENTS (Mixtures Only) N.A.

MATERIAL OR COMPONENT/C.A.S. #	WT. %	HAZARD DATA (SEE SECT. J)
NOT APPLICABLE		

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I. ENVIRONMENTAL

DEGRADABILITY/AQUATIC TOXICITY

Aquatic Toxicity:
TLm96: over 1000 ppm – Reference (a).

OCTANOL/WATER PARTITION COEFFICIENT

EPA HAZARDOUS SUBSTANCE? ☐ YES ☒ NO IF SO, REPORTABLE QUANTITY: _____ # — 40 CFR 116 117

WASTE DISPOSAL METHODS (DISPOSER MUST COMPLY WITH FEDERAL, STATE AND LOCAL DISPOSAL OR DISCHARGE LAWS)

Disposal of GENETRON 22 chlorodifluoromethane may be subject to state and local regulations. Users of this product should review their operations in terms of applicable state and local laws and regulations, then consult with appropriate regulatory agencies before discharging or disposing of waste material.

RCRA STATUS OF UNUSED MATERIAL — 40 CFR 261
Not a "hazardous waste".

J. REFERENCES

PERMISSIBLE CONCENTRATION REFERENCES

TLV from the ACGIH 1981 list, "Threshold Limit Values for Chemical Substances . . .".

REGULATORY STANDARDS — D.O.T. CLASSIFICATION: Nonflammable gas. — 49 CFR

GENERAL

(a) NIOSH Registry, 1979, Accession No. PA 639 00 00.
(b) Belej, M.A., et al., *Toxicology 2*, 381-395 (1974).
(c) Bretherick, L., Handbook of Reactive Chemical Hazards, 2nd Ed., 1979, Butterworths, Boston, entry on "Aluminum".
(d) General Electric's published Material Safety Data Sheet #307, Revision B, August, 1979, "Chlorodifluoromethane", J.M. Nielsen, editor, Schenectady 12305.

K. ADDITIONAL INFORMATION

(e) Reinhardt, C. F., Personal communication to the ACGIH TLV Committee (prior to 1981).
(f) ICI, Mond Division (UK), April, 1981.

C. HAZARDS INFORMATION (continued)

Health – Inhalation (continued):

Published animal studies report this material reduces heart efficiency at concentrations of 25,000 or more, Reference (b). In addition, cardiac sensitization* to epinephrine has been observed at concentrations of 50,000 ppm, Reference (e).

*Cardiac sensitization can cause death in animals and in man.

Health – Chronic

A two-year inhalation study indicated a slight increase in rat salivary gland tumors at the highest level of exposure tested (50,000 ppm). There were no observable results in rats at exposure levels of 1000 ppm and 10,000 ppm, and none in mice at any dose level. No changes in the current TLV have been recommended as a result of this study, Reference (f).

Fire and Explosion – Unusual Fire and Explosion Hazards (continued):

Mixtures of GENETRON 22 and air (or oxygen), under pressures of 200 psig or higher, have been observed to ignite and to burn, generating explosive pressures. Therefore, GENETRON 22/air mixtures should be depressurized and removed from refrigeration systems and piping before welding.

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ALLIED

CHEMICALS COMPANY

PRODUCT SAFETY DATA SHEET

A. GENERAL INFORMATION

TRADE NAME (COMMON NAME OR SYNONYM)	☐ C.A.S. NO. ☒ ALLIED PRODUCT CODE#
GENETRON® 500 azeotrope	096-000810

CHEMICAL NAME

Dichlorodifluoromethane/Difluoroethane

FORMULA	MOLECULAR WEIGHT
CCl_2F_2/CHF_2CH_3	99.31 (average)

DIVISION/PLANT ADDRESS (No., STREET, CITY, STATE AND ZIP CODE)

ALLIED CORPORATION
CHEMICALS SECTOR
P.O. Box 1139R
Morristown, N.J. 07960

CONTACT	PHONE NUMBER	ISSUED DATE	REVISED DATE
Director, Product Safety	(201) 455-4157	Feb., 1976	Mar., 1981

B. FIRST AID MEASURES

EMERGENCY PHONE NUMBER: (201) 455-2000

Inhalation: Remove to fresh air. If breathing has stopped, give artificial respiration. Call a physician. Use oxygen as required. Do not give epinephrine (adrenalin).
Skin or eye: Bathe (do not rub) with lukewarm (not hot) water. Call a physician. In absence of water, cover with soft wool.

C. HAZARDS INFORMATION

FIRE AND EXPLOSION

FLASH POINT	AUTOIGNITION TEMPERATURE	FLAMMABLE LIMITS IN AIR (% BY VOL.)
N.A. °C (Not Flammable) ☐ OPEN CUP ☐ CLOSED CUP	N.A. °C	LOWER N.A. UPPER

UNUSUAL FIRE AND EXPLOSION HAZARDS

Contact with molten aluminum, barium, and lithium shavings.

HEALTH

INHALATION

Asphyxiant and cardiac effects: See K.
Chronic effect of major component: See H.

INGESTION

N.A. (gaseous)

SKIN

Contact with liquid can cause frost bite, indicated by pallor or redness, loss of sensation, swelling.

EYES

Same as skin.

PERMISSIBLE CONCENTRATION (SEE SECTION J) AIR	BIOLOGICAL
None established: See major Component, H. TLV: Same	None established

UNUSUAL CHRONIC TOXICITY

See Major Component, H.

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D. PRECAUTIONS/PROCEDURES

VENTILATION

Local Exhaust: where leakage is probable.
Mechanical (General): adequate for storage areas.

NORMAL HANDLING

Do not puncture or drop cylinders or expose to excessive heat. Use authorized containers only. Do not puncture tubing.

STORAGE

Cool, well-ventilated area away from heat or flame. Protect cylinder and its fittings from physical damage.
Details on storage: see CGA Pamphlet below.

PRECAUTIONARY LABEL [X] ATTACHED [ ] NOT ATTACHED

D.O.T. Classification: nonflammable gas.
Allied Chemical label #G500-0V-24-80.

SPILL OR LEAK

If large quantity is released, evacuate personnel and allow to dissipate. Note Sections C and H for hazards involved.

FIRE EXTINGUISHING AGENTS RECOMMENDED

N.A.

SPECIAL FIRE FIGHTING PRECAUTIONS

Wear self-contained breathing apparatus approved by NIOSH. Keep cylinders cool with water spray.

FIRE EXTINGUISHING AGENTS TO AVOID

No standard medium.

SPECIAL PRECAUTIONS/PROCEDURES

Follow OSHA regulations for compressed gases and for airborne contaminants. For cylinder handling, also see Compressed Gas Association Pamphlet P-1, 1974.

E. PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION

None required for normally vented work situations. For accidental or non-ventilated situations where concentrations exceed 1000 ppm, use self-contained breathing apparatus or supplied air respirator; these are estimated effective to 10,000 ppm.

EYES AND FACE

Chemical safety goggles if there is a reasonable probability of contact with liquid or strong gas blast.

HANDS, ARMS, AND BODY

Protective gloves & clothing with impervious outer layer (of PVA or neoprene) and thermal insulation underneath. Both to be worn where leakage of liquid or strong blast of gas is reasonably probable. Remove immediately any wet non-impervious clothing.

OTHER CLOTHING AND EQUIPMENT

Impervious shoes with similar lining, worn under the same conditions as clothing above. Removal as for clothing.

F. PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS):	APPEARANCE AND ODOR	
☐ LIQUID ☐ SOLID ☒ GAS ☐ _____	Colorless gas, with fain, ethereal odor. 30 lb. to 1 ton cylinder, with green (Nonflammable Gas) Label. At times, tank truck, with green (Nonflammable Gas) Placard.	
BOILING POINT −33.5 °C MELTING POINT −158 to −119 °C (estimated)	SPECIFIC GRAVITY (H_2O = 1) (Liquid) 1.171	VAPOR DENSITY (21.1 C.) 3.52
SOLUBILITY IN WATER (% by Weight) Slight	pH Unknown. Estimated to be neutral.	VAPOR PRESSURE (at 21.1 C.) 85.4 psig
EVAPORATION RATE (Butyl Acetate = 1) N.A. (gas)	% VOLATILES BY VOLUME (At 20°C) 100	

G. REACTIVITY DATA

STABILITY	CONDITIONS TO AVOID
☐ UNSTABLE ☒ STABLE	Fires, hot surfaces, lighted cigarettes, welding.

INCOMPATIBILITY (MATERIALS TO AVOID)

Hot reactive metals. Strong oxidants, including halogens.
Powdered aluminum, magnesium, zinc.

HAZARDOUS DECOMPOSITION PRODUCTS

Halogens, halogen acids, carbonyl halides, including phosgene, carbon monoxide, carbon dioxide.

HAZARDOUS POLYMERIZATION	CONDITIONS TO AVOID
☐ MAY OCCUR ☒ WILL NOT OCCUR	

H. HAZARDOUS INGREDIENTS (Mixtures Only) (TWA = Permissible Concentration_OSHA)

MATERIAL OR COMPONENT	Wt. %	HAZARD DATA (SEE SECT. J)
	(Liquid Phase)	
Dichlorodifluoromethane (Synonyms: Fluorocarbon 12, Propellant 12, Refrigerant 12)	73.8	TWA: 1000 ppm. TLV: Same. Acute effects: See K. Chronic effects: may be mutagenic in N. Crassa. Other effects: increased lymphocyte count, liver damage, transitory hyperemia. DOT: Nonflammable Gas.
1,1 Difluoroethane (Synonyms: Fluorocarbon 152a, Refrigerant 152a, Ethylidene Fluoride)	26.2	TWA: None established. TLV: Same. Acute effects: See K. DOT Classification: Flammable Gas.
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I. ENVIRONMENTAL

DEGRADABILITY

Not considered biodegradable.

OCTANOL/WATER PARTITION COEFFICIENT

Unknown

WASTE DISPOSAL METHODS*

Disposal of Genetron® 500 azeotrope may be subject to federal, state, and local regulations. Users of this product should review their operations in terms of applicable federal, state, and local laws and regulations, then consult with appropriate regulatory agencies before discharging or disposing of waste material.

*DISPOSER MUST COMPLY WITH FEDERAL, STATE AND LOCAL DISPOSAL OR DISCHARGE LAWS.

J. REFERENCES

PERMISSIBLE CONCENTRATION REFERENCES

OSHA Regulations, 20 CFR 1910.1000.
TLV from the 1980 ACGIH List, "Threshold Limit Values for Chemical Substances. . . ."

REGULATORY STANDARDS

DOT Classification of components, Section H: Hazardous Materials Table: 49 CFR 172.101. For the product, Section D, Classification by Allied, based on definitions, 49 CFR 173.300.

GENERAL

(a) NIOSH Registry, sequence numbers PA 82 00 000 and KI 141 0000, 1978.
(b) Documentation of the Threshold Limit Values, Am. Conf. Govt. Ind. Hygienists, 3rd Ed., 1971.
(c) NIOSH/OSHA, "Pocket Guide to Chemical Hazards", 1978.
(d) Allied Product Safety Data Sheets on G12 and on C152a, 1979.

K. ADDITIONAL INFORMATION

C. Inhalation (continued):

This material is low in toxicity at concentrations in air as high as 4% (40,000 ppm), but when oxygen levels in air are reduced to 12-14%, symptoms of asphyxiation loss of coordination, increased pulse rate and deeper respirations will occur. Also for the major component, published animal studies report that cardiac arrhythmia and myocardial depression are produced in species as follow, if inhaled 5 minutes at varying concentrations

Species	Minimum Inhaled Concentration (ppm)
Monkey	50,000-100,000
Mouse	over 400,000
Rat	over 400,000
Dog	100,000

(1) Belej, M.A., et al., Toxicology 2, 381-395 (1974). (2) Aviado, D.M., Ibid 3, 221-232 (1975).

(The substituted ethane component is somewhat less toxic, see Ref. d).

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ALLIED

PRODUCT SAFETY DATA SHEET

GENETRON® 502 AZEOTROPE

A. GENERAL INFORMATION

TRADE NAME (COMMON NAME OR SYNONYM)	☐ C.A.S. NO. ☒ ALLIED PRODUCT CODE #
GENETRON® 502 azeotrope	096-009 570

CHEMICAL NAME
Chlorodifluoromethane/Chloropentafluoroethane

FORMULA	MOLECULAR WEIGHT
$CHClF_2/CClF_2CF_3$	111.6 (average)

DIVISION/PLANT ADDRESS (No., STREET, CITY, STATE AND ZIP CODE)
ALLIED CORPORATION
CHEMICALS SECTOR
P.O. Box 1139R
Morristown, N.J. 07960

CONTACT	PHONE NUMBER	ISSUED DATE	REVISED DATE
Director, Product Safety	(201) 455-4157	Sep. 1977	Mar. 1981

B. FIRST-AID MEASURES

EMERGENCY PHONE NUMBER (201) 455-2000

Inhalation: Remove to fresh air. If breathing has stopped, give artificial respiration. Call a physician. Use oxygen as required. Do not give epinephrine (adrenalin).
Skin or eye: bathe (do not rub) with lukewarm (not hot) water. Call a physician. In absence of water, cover with soft wool.

C. HAZARDS INFORMATION

FIRE AND EXPLOSION

FLASH POINT	AUTOIGNITION TEMPERATURE	FLAMMABLE LIMITS IN AIR (% BY VOL.)
N.A. °C (Nonflammable) ☐ OPEN CUP ☐ CLOSED CUP	N.A. °C	LOWER N.A. UPPER

UNUSUAL FIRE AND EXPLOSION HAZARDS
Toxic decomposition products: see Section G.

HEALTH

INHALATION
Exposure to very high concentrations may produce heart palpitations or arrhythmias. See also Section K.

INGESTION
N.A. (Gas)

EYES
Can cause frostbite, indicated by pallor or redness, loss of sensation, and swelling.

SKIN
Same as skin.

PERMISSIBLE CONCENTRATION AIR (SEE SECTION J): None established (OSHA)
TLV: None established. See Components, H.
BIOLOGICAL: None established

UNUSUAL CHRONIC TOXICITY
None is known.

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PRECAUTIONS/PROCEDURES

VENTILATION

Local Exhaust: where leakage is probable.
Mechanical (General): adequate for storage areas.

NORMAL HANDLING

Do not puncture or drop cylinders or expose to excessive heat. Use authorized containers only. Do not puncture tubing.

STORAGE

Cool, well-ventilated area away from heat or flame. Protect cylinder and its fittings from physical damage. Details on storage: see CGA Pamphlet below.

PRECAUTIONARY LABEL ☐ ATTACHED ☒ NOT ATTACHED

DOT classification: Nonflammable gas

SPILL OR LEAK

If large quantity is released, evacuate personnel and allow to dissipate. Note Sections C and K for hazards involved.

FIRE EXTINGUISHING AGENTS RECOMMENDED

N.A.

SPECIAL FIRE FIGHTING PRECAUTIONS

Wear self-contained breathing apparatus approved by NIOSH. (Note limitations as far as recommended range of protection is concerned, see E.) Keep cylinders cool with water spray.

FIRE EXTINGUISHING AGENTS TO AVOID

No standard medium.

SPECIAL PRECAUTIONS/PROCEDURES

Follow OSHA regulations for compressed gases and for airborne contaminants. For cylinder handling, also see Compressed Gas Association Pamphlet P-1, 1974.

E. PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION

None required for normally vented work situations. For accidental or emergency situations where concentrations exceed 1000 ppm, use self-contained breathing apparatus or supplied air respirator. These are estimates effective to 10,000 ppm.

EYES AND FACE

Chemical safety goggles if there is a reasonable probability of contact with liquid or strong gas blast.

HANDS, ARMS AND BODY

Protective gloves & clothing with impervious outer layer (of PVA or neoprene) and thermal insulation underneath. Both to be worn where leakage of liquid or strong blast of gas is reasonably probable. Remove immediately any wet non-impervious clothing.

OTHER CLOTHING AND EQUIPMENT

Impervious shoes with similar lining, worn under the same conditions as clothing above. Removal as for clothing. Water source for first aid in case of frostbite.

I. PHYSICAL DATA

MATERIAL @ (AT NORMAL CONDITIONS)	APPEARANCE AND ODOR	
☐ LIQUID ☐ SOLID ☒ GAS	Colorless with faint ethereal odor. 30 lb to 1 ton cylinder with green (Non-Flammable Gas) label, at times, tank truck with green placard.	
BOILING POINT −45.4 °C MELTING POINT Unknown °C	SPECIFIC GRAVITY (H_2O = 1) (Liquid) 1.258	VAPOR DENSITY (AIR = 1) (@ 0°C., 1 atm.) 3.93
SOLUBILITY IN WATER (% by Weight) Negligible	pH Aqueous estimated to be neutral	VAPOR PRESSURE (AT 21.1C.) 137.6 psig
EVAPORATION RATE (Butyl Acetate = 1) N.A. (gas)	% VOLATILES BY VOLUME (At 20°C) 100	

II. REACTIVITY DATA

STABILITY	CONDITIONS TO AVOID
☐ UNSTABLE ☒ STABLE	Fires, hot surfaces, lighted cigarettes, welding.

INCOMPATIBILITY (MATERIALS TO AVOID)

Strong oxidants, including halogens, hot reactive metals. Powdered aluminum, magnesium, zinc.

HAZARDOUS DECOMPOSITION PRODUCTS

We have no data, but from analogy with other fluorocarbons we estimate halogens, halogen acids, carbonyl halides, including phosgene.

HAZARDOUS POLYMERIZATION	CONDITIONS TO AVOID
☐ MAY OCCUR ☒ WILL NOT OCCUR	

III. HAZARDOUS INGREDIENTS (Mixtures Only) (TWA = Permissible Concentration, OSHA)

MATERIAL OR COMPONENT	C.A.S. No.	WT. %	HAZARD DATA (SEE SECT. J)
Chlorodifluoromethane	75-45-6	48.8	TWA: None established
(Synonyms: Fluorocarbon 22, Genetron® 22, Propellant 22, Refrigerant 22, Monochlorodifluoromethane)			
			TLV: 1000 ppm. LC_{50} (rat) 25%/4H. Acute effects (cont.d) see K. DOT Classification: Non-flammable gas.
Chloropentafluoroethane	76-15-3	51.2	TWA: None established
(Synonyms: Fluorocarbon 115, Genetron® 115, Refrigerant 115, Monochloropentafluoroethane)			TLV: Same. Acute effects: see K. DOT classification: Nonflammable gas.

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I. ENVIRONMENTAL

DEGRADABILITY

Not considered biodegradable, but volatile.

OCTANOL/WATER PARTITION COEFFICIENT
Unknown

WASTE DISPOSAL METHODS*

Disposal of Genetron 502 may be subject to federal, state, and local regulations. Users of this product should review their operations in terms of applicable federal, state, and local laws and regulations, then consult with appropriate regulatory agencies before discharging or disposing of waste material.

*DISPOSER MUST COMPLY WITH FEDERAL, STATE AND LOCAL DISPOSAL OR DISCHARGE LAWS.

J. REFERENCES

PERMISSIBLE CONCENTRATION REFERENCES

TLV for component (see H) from the 1980 ACGIH list, "Threshold Limit Values For Chemical Substances. . .".

REGULATORY STANDARDS

DOT classification of components (see H) from D.O.T. Hazardous Materials Table: 49 CFR 172.101. Mixture Classification (see D) by Allied Chemical corporation, based on the definition, 49 CFR 173.300.

GENERAL

Chlorodifluoromethane: (a) NIOSH Registry, 1978, Sequence No. PA 639 0000.
(b) Documentation of the Threshold Limit Values, 3rd Ed., 1971, ACGIH

Chloropentafluoroethane: (c) Aviado, D.M. Toxicology 3, 321-332 (1975) (and his references).
(d) Allied Chemical, Product Safety Data Sheet for GENETRON® 115, Mar., 1981.

K. ADDITIONAL INFORMATION

Section H - Acute Effects (Cont'd)

Asphyxiant Effect

This material is low in toxicity at concentrations in air as high as 4% (40,000 ppm); but when oxygen levels in air are reduced to 12-14%, symptoms of asphyxiation, loss of coordination, increased pulse rate, and deeper respirations will occur. (This information is applicable to the chlorodifluoromethane component and was also developed, not for the other component, but for dichlorotetrafluoroethane. However, toxicologic research indicates that chloropentafluoroethane is probably less toxic than dichlorotetrafluoroethane due to the greater fluorine proportion in its halogen content.)

Cardiac Effect

Published animal studies (anesthesized monkey) report that the GENETRON 22 component reduces heart efficiency if inhaled five minutes at airborne concentrations of 2.8-10 percent, (depression of contractibility with a fall in aortic blood pressure) (Belej, M.A. et al., Toxicology 2, 381-395 (1974). (The substituted ethane component is expected to be somewhat less toxic, Ref. (d)).

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SUBURBAN PROPANE
301 RT. 17 NORTH
MAHWAH, N.J. 07430
201-529-3500

Section I **MATERIAL SAFETY DATA SHEET**

Supplier's Name: Suburban Propane Division of National Distillers & Chemical Corp.

Emergency Phone Number

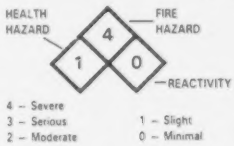
Address

Chemical Name: LIQUEFIED PETROLEUM GAS or PROPANE

CAS Registry No.: 74-98-6 Chemical Family: Hydrocarbon

Formula: C_3H_8

WARNING: Danger! Extremely flammable. Compressed Gas. Asphyxiant in high concentrations. Contact with liquid causes burns similar to frost bite. OSHA permissible exposure limit (PEL) 1000 ppm for an 8-hour workday.



Appearance and Odor: Vapor and liquid are colorless. Product contains an odorant (unpleasant odor)

Section II **HAZARDOUS INGREDIENTS**

Hazardous Mixtures: Air with 2.15 to 9.60 percent propane

Section III **PHYSICAL DATA**

Boiling Point: -44°F

Specific Gravity ($H_2O=1$): 0.51

Vapor Density (air=1): 1.52

Solubility in Water: Slightly

Vapor Pressure (PSIG) at 100°F: 205

Percent, Volatile by Volume (%): 100

Evaporation rate: Gas at normal ambient temperatures

Section IV **FIRE AND EXPLOSION HAZARD DATA**

Flash Point: -156°F (CC) Classification: Flammable Gas UN 1075

Flammable Limits - LFL 2.15 UFL 9.60 Extinguishing Media: Water spray-Class A-B-C or BC fire extinguisher. Special Fire Fighting Procedures: Stop flow of gas. Use water to keep fire exposed containers cool. Use water spray to disperse unignited gas or vapor. If ignition has occurred and no water available, tank metal may weaken from overheating. Evacuate area. If gas has not ignited, LP-Gas liquid or vapor may be dispersed by water spray or flooding.

Decomposition Products under Fire Conditions: Fumes, smoke, carbon monoxide, aldehydes and other decomposition products in the case of incomplete combustion.

EMPTY Container Warning: "Empty" containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Section V **HEALTH HAZARD**

OSHA P.E.L. 1000 PPM ACGIH TLV 1000 PPM Effects of Overexposure: Inhalation - concentrations can lead to symptoms ranging from dizziness to anesthesia and respiratory arrest. Eyes - moderate irritation. Emergency & First Aid procedures: Inhalation - remove to fresh air. Guard against self injury. Apply artificial respiration if breathing has stopped.

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Form No. SD 5120 075

Section VI **REACTIVITY DATA**

Stable: X Unstable: _____ Hazardous Decomposition Products: None
Incompatibility (materials to avoid): Mixing with oxygen or air, except at burner
Hazardous Polymerization: May occur _____ Will not occur X

Section VII **SPILL OR LEAK PROCEDURES**

Steps to be taken in case material is released: Keep public away. Shut off supply of gas. Eliminate sources of ignition. Ventilate the area. Disperse with water spray. Contact between skin and these gases in liquid form can cause freezing of tissue causing injury similar to thermal burn.
Waste Disposal Method: Controlled burning. Contact supplier.

Section VIII **SPECIAL PROTECTION INFORMATION**

Respiratory Protection: Stay out of gas or vapor (because of fire hazard). Ventilation: Explosion-proof motors and keep sources of ignition at safe distances. Personal Protective Equipment and Apparel: Leather or equivalent gloves, goggles for protection against accidental release of pressurized product.

Section IX **SPECIAL PRECAUTIONS**

Precautions to be taken when handling and storing: Keep containers away from heat sources and store in upright position. Containers should not be dropped. Keep container valve closed when not in use.
Other Precaution: Install protective caps when not connected for use.

Section X **TOXICOLOGICAL INFORMATION**

OSHA Carcinogen Classification (29 CFR 1910) Not listed/applicable X
U.S. Department of Health (21 CFR 184.1655): Generally recognized as safe (GRAS) as a direct human food ingredient when used as a propellant, aerating agent and gas as defined in Section 170.3(o)(25).

Section XI **DOT LABELING INFORMATION (49 CFR 100-199)**

Proper shipping name: Liquefied Petroleum Gas Identification No: UN 1075
Hazardous Classification: Flammable Gas Label(s) Required: Flammable Gas

Section XII **ISSUE INFORMATION**

Issue Date: July 10, 1987

This material safety data sheet and the information it contains is offered to you in good faith as accurate. Suburban Propane does not manufacture this product but is a supplier of the product independently manufactured by others. Much of the information contained in this data sheet was received from sources outside our Company. To the best of our knowledge this information is accurate, but Suburban Propane does not guarantee its accuracy or completeness. Health and safety precautions in this data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely, comply with all applicable laws and regulations and to assume the risks involved in the use of this product.

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MATERIAL SAFETY DATA SHEET : M/M QUICK CURE PAGE : 01

(000356-0498 -P0000584-3560) DATE OF ISSUE 11/12/86 | SUPERSEDES 10/06/86

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS: N/A
TRADE NAME & SYNONYMS: M/M QUICK CURE

CHEMICAL FAMILY: EPOXY STICK
FORMULA: X<--MIXTURE

MANUFACTURERS NAME:
CERTIFIED LABS. DIV. OF NCH CORP.

ADDRESS (NUMBER, STREET, CITY, STATE & ZIP CODE)
BOX 152170
IRVING, TEXAS 75015

PREPARED BY	PRODUCT CODE NUMBER	EMERGENCY TELEPHONE NUMBER
MARK COHEN/T.S.CHEMIST	3560	214-438-4144 EXT. 013

SECTION II- HAZARDOUS INGREDIENTS

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS AS THE PRODUCT MIXTURE HAS NOT BEEN TESTED AS A WHOLE.

CHEMICAL NAME (INGREDIENTS)	HAZARD	TLV*	PEL*	CAS#
BASE: DIGLYCIDIAL ETHER OF BIS PHENOL A	IRRITANT	5 MG/M3 2.	N/A	25085-99-8
2,4,6 TRI(DIMETHYLAMINO METHYL PHENOL) *	CORROSIVE	5PPM 3.	NOT EST.	90-72-2

SECTION III - PHYSICAL DATA

BOILING PT.(FAHRENHEIT)	B:>250 F	SPEC GRAVITY (H2O=1)	>1

M/M QUICK CURE

(CONTINUED) SECTION III - PHYSICAL DATA PAGE : 02

VAPOR PRESSURE (MM HG)	N/A	COLOR	A:LT.GRAY B:DRK GRAY
VAPOR DENSITY (AIR=1)	>1	ODOR	MERCAPTAN LIKE
PH @ 100%	N/A	CLARITY	PUTTY
PERCENT VOLATILE BY VOLUME (%)	NIL	EVAPORATION RATE (BU AC = 1)	N/A
SOLUBILITY IN WATER	N/A		
VISCOSITY	N/A		

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT (METHOD USED)	FLAMMABLE LIMITS	LEL	UEL
A:>250 F.CLOSED CUP		N/A	N/A

EXTINGUISHING MEDIA "ALCOHOL" X<--FOAM X<--FOAM X<--CO2 X<--DRY CHEMICAL <--WATER SPRAY <--OTHER

SPECIAL FIRE FIGHTING PROCEDURES
WEAR NIOSH/MSHA APPROVED RESPIRATOR WHEN FIGHTING FIRES IN CONFINED AREAS TO PROTECT FROM ACRID SMOKE, FUMES AND HAZARDOUS DECOMPOSITION PRODUCTS.

UNUSUAL FIRE & EXPLOSION HAZARDS
NONE KNOWN

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

NOT ESTABLISHED FOR MIXUTRE SEE SECTION II

EFFECTS OF OVEREXPOSURE

- ACUTE - (SHORT TERM EXPOSURE)

PROLONGED OR REPEATED EXPOSURE MAY CAUSE SKIN SENSITIZATION. IN SENSITIVE INDIVIDUALS CONTACT MAY CAUSE SKIN IRRITATION. THIS PRODUCT IS BOTH MECHANICALLY IRRITATING AND CHEMICALLY IRRITATING TO THE EYES. INHALATION IS NOT A HAZARD IN NORMAL USE HOWEVER THIS PRODUCT GIVES OFF TOXIC FUMES WHEN BURNED OR WELDED. INGESTION MAY LEAD TO GASTRIC IRRITATION WITH NAUSEA AND VOMITING.

- CHRONIC - (LONG TERM EXPOSURE)

NO EFFECTS OTHER THAN THOSE NOTED UPON ACUTE EXPOSURE.

M/M QUICK CURE

(CONTINUED) SECTION V - HE. HAZARD DATA PAGE: 03

PRIMARY ROUTE OF ENTRY: <-- INHALATION <-- INGESTION <-- ABSORPTION

EMERGENCY & FIRST AID PROCEDURES
INHALATION
GENERALLY NOT A HAZARD. MOVE TO FRESH AIR AND TREAT SYMPTOMATICALLY. GIVE OXYGEN IF BREATHING IS DIFFICULT AND ARTIFICIAL RESPIRATION IF BREATHING HAS STOPPED. GET MEDICAL ATTENTION.

EYE CONTACT
FLUSH WITH LARGE AOUNTS OF WATER FOR 10 MINUTES, LIFTING UPPER AND LOWER LI DS OCCASONALLY. GET MEDICAL IRRITATION IF IRRITATION PERSISTS. TREATMENT IS MOST EFFECTIVE WITHIN ONE MINUTE.

SKIN CONTACT
WASH WITH SOAP AND WATER. SENSITIVE INDIVIDUALSSHOULDAPPLY AN EMOLLIENT RICH CREAM AND SHOULD SEE A PHYSICIAN IF IRRITATION PERSISTS.

INGESTION
DO NOT INDUCE VOMITING. GIVE ONE OR TWO GLASSES OF WATER AND CALL PHYSICIAN ASPIRATION OF MATERIAL INTO THE LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

NOTES TO PHYSICIAN
GASTRIC LAVAGE IN INDICATED. DO NOT INDUCE VOMITING.

SECTION VI - TOXICITY INFORMATION

2,4,6 TRI(DIMETHYLAMINO METHYL PHENOL)
ORL-RAT LD50: 2.5 G/KG 1. SKN-RAT LD50: 1280 MG/ KG 1.
SKN-RBT LD50: 1.2G/KG 1. SKN-RBT 500MG/24H SEVERE 1.
EYE-RBT 500MG/24H/SEVERE 1.

DIGLYCDIAL ETHER OF BISPHENOL A
SKN-RBT 500 MG OPEN WILD 1.
EYE-RBT 3 MG/24 H SEVERE 1.
ORL-RAT LD50: 11 G/KG 1.

SECTION VII - REACTIVITY DATA

STABILIYY	X<--STABLE	<--UNSTABL	CONDIDTIONS TO AVOID
	OPEN FLAMES, LONG-TERM EXPOSURE TO HIGH TEMPERATURES.		

INCOMPATIBILITY (MATERIALS TO AVOID)
STRONG OXIDIZING AGENTS OR STRONG BASES OR MINERAL ACIDS

HAZARDOUS DECOMPOSITION PRODUCTS
OXIDES OF CARBON, NITROGEN, AMMONIA AND ACRID SMOKE AND FUMES.

M/M QUICK CURE

(CONTINUED) SECTION VII - REACTIVITY DATA PAGE 04

	WILL NOT	MAY	CONDITIONS TO AVOID
HAZARDOUS	X <--OCCUR	<--OCCUR	
POLYMERIZATION	N/A		

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TAKEN IN CASE MATERIAL IS RELEASED OR SPILLEC
DUE TO THE NATURE OF THE PACKAGING OF THIS PRODUCT A SPILL IS UNLIKELY

WASTE DISPOSAL METHOD
PER ALL LOCAL STATE AND FEDERAL REGULATINS CONCERNING HEALTH AND POLLUTION FOR DISPOSAL PROCEDURES

NEUTRALIZING AGENT
N/A

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION
LOCAL EXHAUST RECOMMENDED TO CONTROL VAPOR LEVELS IF BURNNED OR WELDED
GENERAL EXHAUST IS MORE THAN ADEQUATE TO PROTECT WORKER FROM EXPOSURE TO LEVELS ABOVE PERMISSIBLE EXPOSURE LIMITS

RESPIRATORY PROTECTION
WEAR NIOSH APPROVED RESPIRATOR TO PROVIDE ADEQUATE VENTILATION WHEN BURNING, WELDING OR MACHINING(GRINDING)

PROTECTIVE GLOVES
RUBBER GLOVES SHOULD BE WORN BY SENSITIVE INDIVIDUAL DEPENDING ON SEVERITY OF EXPOSURE

EYE PROTECTION
SAFETY GOGGLES SHOULD BE WORN DEPENDING ON SEVERITY OF EXPOSURE

OTHER PROTECTION
CLEAN, PROTECTIVE CLOTHING SHOULD BE WORN

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE	INDOOR	HEATED	REFRIGERATED	OUTDOOR
100 F <--MAX 30 F <--MIN	X		X	

M/M QUICK CURE

(CONTINUED) SECTI - STORAGE AND HA G INFORMATIPAGE : 05

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
AVOID CONTACT WITH EYES, SKIN AND CLOTHING.

OTHER PRECAUTIONS
WASH THOROUGHLY AFTER HANDLING. KEEP OUT OF REACH OF CHILDREN. AVOID CONTACT WITH EYES, SKIN AND CLOTHING..

SECTION XI - TRANSPORTATION - (FOR FUTURE USE)

APPLICABLE REGULATIONS
<--49 CFR <--IMCO <--TARIFF 6 D <--IATA <--MILITARY AIR (AFR 71-4)

SHIPPING NAME

HAZARD CLASS | ID NUMBER | REPORT QTY

LABELS | LIMITED QTY

UNIT CONTAINER

DOT SPS CONTAINER | NET EXPLOSIVE WT.

AEROSOL PROPELLANT(S)

SECTION XII - REFERENCES

1. DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, 6TH EDITION, N. IRVING SAX.
2. THRESHOLD LIMIT VALUE FOR CHEMICAL SUBSTANCES IN THE WORK ENVIRONMENT, 2ND EDITION, ACGIH, 1985.
3. VENDOR'S MSDS
* INGREDIENT PERCENTAGE IS A TRADE SECRET. MASS TRADE SECRET NUMBER 99-127-002

M/M QUICK CURE

(CONTINUED) SECTION XII - REFERENCES PAGE : 06

* THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

CERTIFIED LABS, DIV OF NCH CORP ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE , STORAGE OR DISPOSAL OF THE PRODUCT IN A MANNER NOT RECOMMENDED ON THE PRODUCT LABEL. USERS ASSUME ALL RISKS ASSOCIATED WITH SUCH UNRECOMMENDED USE, STORAGE, OR DISPOSAL OF THE PRODUCT.

C.A.S. No.
0076470/0

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME: Corco Chemical Corporation	EMERGENCY TELEPHONE NO.: (215) 295-5006/5007
ADDRESS (Number, Street, City, State, and ZIP Code): Tyburn Rd. & Cedar Lane, Fairless Hills, Penna. 19030	
CHEMICAL NAME AND SYNONYMS: Hydrochloric Acid	TRADE NAME AND SYNONYMS: --
CHEMICAL FAMILY: --	FORMULA: HCl

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES				%	TLV (Units)

NOT APPLICABLE

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	-121	SPECIFIC GRAVITY (H_2O=1)	1.19
VAPOR PRESSURE (mm Hg.)		PERCENT, VOLATILE BY VOLUME (%)	
VAPOR DENSITY (AIR=1)	1.3	EVAPORATION RATE (_____=1)	
SOLUBILITY IN WATER	very	Melting Point-	-175°F
APPEARANCE AND ODOR			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel

EXTINGUISHING MEDIA
Water, neutralize with chemically basic substances such as soda ash or slaked lime.

SPECIAL FIRE FIGHTING PROCEDURES

UNUSUAL FIRE AND EXPLOSION HAZARDS
Highly corrosive to most metals with evolution of hydrogen gas, which is highly flammable when mixed with air.

(Continued on reverse side)

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE 5 PPM

EFFECTS OF OVEREXPOSURE
Material is corrosive and causes severe burns. May be fatal if swallowed.

EMERGENCY AND FIRST AID PROCEDURES CALL A PHYSICIAN
External: In case of eye contact, flush with water for at least 15 minutes. For skin contact, flood with tap water, then water containing sodium bicarbonate. Internal: DO NOT GIVE EMETICS. Give tap water, milk or milk of magnesia. Give whites of eggs beaten with water.

SECTION VI - REACTIVITY DATA

STABILITY			CONDITIONS TO AVOID
	UNSTABLE		
	STABLE	X	

INCOMPATABILITY (Materials to avoid)
Reacts with most metals to produce hydrogen gas

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION			CONDITIONS TO AVOID
	MAY OCCUR		
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Flush away spill by flooding with water, applied quickly to entire spill. Check with local regulations.

WASTE DISPOSAL METHOD
Dispose according to local regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)
Self-contained breathing apparatus

VENTILATION			
	LOCAL EXHAUST	X	SPECIAL
	MECHANICAL (General)	X	OTHER

PROTECTIVE GLOVES Rubber

EYE PROTECTION

OTHER PROTECTIVE EQUIPMENT
Approved working clothes. Have body shield available

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
Keep in tightly closed container in a cool place. Loosen closure carefully. Wash thoroughly after handling.

OTHER PRECAUTIONS MCA Safety Data Sheet available. SD-39

GPO 934-110

Form OSHA-20
Rev. May 72

220

FAIRCO Welding Products
Division of The BOC Group, Inc.
575 Mountain Avenue
Murray Hill
New Jersey 07974
Telephone: 201-464-8100
TWX. 710-984-7970

Material Safety Data Sheet

ISSUE DATE AND REVISIONS 11/1/84

PRODUCT NAME
NITROGEN

SYNONYMS
None

FORMULA
N2

CHEMICAL FAMILY
Gas

CAS NUMBER
7727-37-9

DOT HAZARD CLASS
Nonflammable Gas

DOT IDENTIFICATION NUMBER
UN 1066 & UN 1977

CHEMTREC
800-424-9300

HAZARDOUS INGREDIENTS	WT.%	TLV	WT%	TLV*
Nitrogen	100%	None (1)		

(1) Simple Asphyxiant ALGIH - 1984ed.

PHYSICAL DATA

Boiling Point
-320.4°F

Liquid Density at Boiling Pt.
0.07

Vapor Pressure
N/A

Gas Density
0.29

Solubility in Water
Slight

Specific Gravity
0.97

Appearance and Odor
Colorless and Odorless Gas and Clear Liquid

FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)
None Nonflammable

Flammable Limits
LEL 0 % UEL 0 %

Extinguishing Media
None

Special Fire Fighting Procedures
Remove from direct heat or open flame, or keep cool with water fog.

Material Safety Data Sheet (G-2)

HEALTH HAZARD DATA

Nontoxic Simple Asphyxiant. Contact with liquid will cause burns, frostbite or blindness. Displaces oxygen in confined areas reducing mental alertness and death.

Recommended First Aid Treatment - Provide oxygen. Treat areas exposed to liquid as frostbite. Employ First Aid techniques recommended by the Red Cr

REACTIVITY DATA

Stability	Conditions to Avoid
Unstable	None
Stable X	

Incompatibility (Materials to avoid)

None

Hazardous Polymerization	Conditions to Avoid
May Occur	
Will Not Occur X	None

SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled - Leaks will dissipate rapidly and harmlessly to atmosphere. For releases in confined areas, remove all personnel and ventilate area. Do not ventilate area with pure oxygen.

Waste Disposal Method

Vent to atmosphere in open area. Remove valves.

SPECIAL PROTECTION INFORMATION

Use SCBA or air line respirators where gas has been released and has diminished the oxygen content below 19%.
Use insulated gloves, face shields and glasses when handling liquid gas.

Storage Recommendations

[illegible] from cylinders. Keep valve protection caps in place when not in use. Store away from direct heat or open flame.
Refer to CGA-P1, "Safe Handling of Compressed Gases", or OSHA 1910 Subpart H and Subpart Q.

AIRCO
Division of The BOC Group, Inc
575 Mountain Avenue
Murray Hill
New Jersey 07974
Telephone: 201-464-8100
TWX: 710-984-7970

MATERIAL SAFETY DATA SHEET

Welding Consumables
and Related Products
Conforms to OSHA 1910.1200

IDENTIFICATION

PRODUCT NAME: Oxygen

SYNONYMS: None

CAS NUMBER: 7782-44-7

CHEMICAL FORMULA: O_2

CHEMICAL FAMILY: Oxidizer

DOT HAZARD CLASS: Nonflammable gas

DOT IDENTIFICATION NUMBER: UN 1072

CHEMTREC: 800-424-9300

HEALTH HAZARD DATA

TIME WEIGHTED AVERAGE EXPOSURE LIMIT:

None established. Oxygen is the "vital element" in the atmosphere in which we live and breathe (approximately 21 molar % of the atmosphere.

SYMPTOMS OF EXPOSURE:

Breathing high concentrations greater that (75 molar percent) causes symptoms of hyperoxia which included cramps, nausea, dizziness, hypothermia, ambylopia, respiratory difficulties, bradycardia, fainting spells and convulsions capable of leading to death. For additional information on hyperoxia, see Compressed Gas Association's Pamphlet P-14.

TOXICOLOGICAL PROPERTIES:

The property is that of hyperoxia which leads to pneumonia. Concentrations between 25 and 75 molar percent present a risk of inflammation of organic matter in the body.

RECOMMENDED FIRST AID TREATMENT:

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO OXYGEN. RESCUE PERSONNEL SHOULD BE COGNIZANT OF EXTREME FIRE HAZARD ASSOCIATED WITH OXYGEN RICH ATMOSPHERES

Conscious persons should be assisted to an uncontaminated area and breathe fresh air. They should be kept warm and quiet. The physician should be informed that the victim is experiencing (has experienced) hyperoxia.

Unconscious persons should be moved to an uncontaminated area and given assisted respiration. When breathing has been restored, treatment should be as above. Continued treatment should be symptomatic and supportive.

Hazardous Mixtures of Other Liquids, Solids, or Gases:

Oxygen vigorously accelerates combustion. Contact with all flammable materials should be avoided. Some materials which are not flammable in air will burn in pure oxygen or oxygen-enriched atmospheres.

PHYSICAL DATA

Boiling Point: -297.3°F (-182.9°C)

Liquid Density @ Boiling Point: 71.23 lb/ft^3 (1141 kg/m^3)

Vapor Pressure @ 70°F (21.1°C): Above the critical temp. of -181.1°F (-118.4°C)

Specific Gravity @ 70°F, 1 atm (Air=1): 1.11

Solubility in Water: Slightly soluble

Freezing Point: -361.8°F (-218.8°C)

Appearance and Odor: Colorless odorless gas.

FIRE/EXPLOSION HAZARDS DATA

Flash Point (Method Used): N/A

Auto Ignition Temperature: N/A

LEL: N/A UEL: N/A

Extinguishing Media: Copious quantities of water for fires with oxygen as the oxider.

Electrical Classification: Nonhazardous

Special Fire Fighting Procedures: If possible, stop the flow of oxygen which is supporting the fire.

Unusual Fire and Explosion Hazards:
Vigorously accelerates combustion.

REACTIVITY DATA

Stability:

Stable

Incompatibility (Materials to Avoid): All flammable materials

Hazardous Decomposition Products:
None

Hazardous Polymerization:

Will not occur

Conditions to Avoid:

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is in container or container valve, contact CHEMTREC for emergency assistance or your closest Airco location.

Waste Disposal Method:

Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to Airco for proper disposal.

SPECIAL PROTECTION INFORMATION

Respiratory Protection: N/A

Ventilation: To prevent accumulation above 25 molar percent.

Local Exhaust: To prevent accumulation of high concentrations so as to reduce the oxygen level in the air to less than 18 molar percent.

Special:
Mechanical (Gen.):
Other

Protective Gloves: Any material.

Eye Protection: Safety goggles or glasses.

Other Protective Equipment: Safety shoes, safety shower.

SPECIAL PRECAUTIONS

Special Labeling Information:

DOT Shipping Name: Oxygen or Oxygen compressed
DOT Shipping Label: Oxidizer
DOT Hazard Class: Nonflammable Gas I.D. No.: UN 1072

Special Handling Recommendations:

Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (3000 psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back-flow into the cylinder.

For additional handling recommendations, consult Compressed Gas Asssociation Pamphlets P-1, P-14, and G-4. NFPA #51-1984, OSHA 1910-Subparts H & Q

Special Storage Recommendations:

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 130F (54C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders being stored for excessive periods of time. Post "No Smoking or OpenFlames" signs in the storage or use area. There should be no sources of ignition in the storage or use area.

For additional recommendations, consult Compressed Gas Association Pamphlets P-1, P-14, and G-4. NFPA #51-1984, OSHA 1910 - Subparts H & Q

Special Packaging Recommendations:

Carbon steels and low alloy steels are acceptable for use at lower pressures. For high pressure applications use stainless steels, copper and its alloys, nickel and its alloys, brass, bronze, silicon alloys, Monel^R, Incone^R or beryllium. Lead and silver or lead and tin alloys are good gasketing materials. Teflon^R and Kel-F^R are the preferred nonmetal gaskets.

Special Note: It should be recognized that the ignition temperature of metals and nonmetals in pure oxygen service decreases with increasing oxygen pressure.

Other Recommendations or Precautions:

Oxygen should not be used as a substitute for compressed air in pneumatic equipment since this type generally contains flammable lubricants. Equipment to contain oxygen must be "cleaned for oxygen service". See Compressed Gas Association Pamphlet G-4.1. Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. Shipments of a compressed gas cylinder, which has not been filled by the owner or with his (written) consent, is a violation of Federal Law (49CFR).

MATERIAL SAFETY DATA SHEET — PREMALUBE-1 — PAGE 01

[illegible] -0197 — DATE OF ISSUE [illegible] — SUPERSEDES / /

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS: N/A — TRADE NAME & SYNONYMS: PREMALUBE-1

CHEMICAL FAMILY: PETROLEUM LUBRICANT — FORMULA: B --MIXTURE

MANUFACTURER'S NAME: CENTRAL LUBE DIV OF NEW CORP

ADDRESS (NUMBER STREET CITY STATE & ZIP CODE): BOX 152170 DALLAS TEXAS 75215

PREPARED BY: NAME CONSULT & CHEMIST — PRODUCT CODE NUMBER: 6187 — EMERGENCY TELEPHONE NUMBER: 214 428 4160 EXT 613

SECTION II - HAZARDOUS INGREDIENTS

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS AS THE PRODUCT MIXTURE HAS NOT BEEN TESTED AS A WHOLE

CHEMICAL NAME INGREDIENTS: — HAZARD TLV: — REL: — CAS#

NO HAZARDOUS INGREDIENTS PER 29 CFR 1910.1200

SECTION III - PHYSICAL DATA

BOILING POINT (DEGREES): 250 — SPEC GRAVITY (H2O=1): [illegible]

VAPOR PRESSURE (MM HG): N/D — COLOR: BLACK

VAPOR DENSITY (AIR=1): — ODOR: PETROLEUM

PREMALUBE-1

CONTINUED — SECTION III - PHYSICAL DATA — PAGE 02

PERCENT VOLATILE BY VOLUME (%): — EVAPORATION RATE: N/D — N/A — CLEARLY OPAQUE — SOLUBILITY IN WATER: INSOLUBLE — VISCOSITY: PASTE

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT (METHOD USED): 500 C.O.C. — FLAMMABLE LIMITS: LEL: N/A — UEL: N/A

EXTINGUISHING MEDIA: B --FOAM — SPECIAL FIRE FIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING GEAR WHEN FIRE FIGHTING IN CONFINED SPACES. COOL EXPOSED CONTAINERS WITH WATER SPRAY.

UNUSUAL FIRE & EXPLOSION HAZARDS: DO NOT MIX OR STORE WITH STRONG OXIDANTS LIKE LIQUID CHLORINE OR CONCENTRATED OXYGEN.

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: NO HAZARDOUS INGREDIENTS

EFFECTS OF OVEREXPOSURE — ACUTE — SHORT TERM EXPOSURE:

INHALATION - NOT A HAZARD
SKIN - PRACTICALLY NON-TOXIC BY SKIN ABSORPTION. NO SKIN EFFECTS EXPECTED
EYE - TEMPORARY DISCOMFORT. NO PERMANENT EFFECTS EXPECTED
INGESTION - PRACTICALLY NON-TOXIC. LARGE DOSES MAY PRODUCE DIARRHEA

--CHRONIC - --LONG TERM EXPOSURE:

NOT A HAZARD

PRIMARY ROUTE OF ENTRY: --INHALATION --INGESTION --ABSORPTION

EMERGENCY & FIRST AID PROCEDURES: INHALATION — NOT A HAZARD

PREMALUBE-1

CONTINUED — SECTION V - HEALTH HAZARD DATA — PAGE 03

EYE CONTACT: FLUSH EYES WITH WATER FOR SEVERAL MINUTES

SKIN CONTACT: WASH WITH SOAP AND WATER

INGESTION: DO NOT INDUCE VOMITING. SEE A PHYSICIAN IMMEDIATELY

NOTES TO PHYSICIAN: N/A

SECTION VI - TOXICITY INFORMATION: N/A

SECTION VII - REACTIVITY DATA

STABILITY: B --STABLE — --UNSTABLE — CONDITIONS TO AVOID: N/A

INCOMPATIBILITY (MATERIALS TO AVOID): STRONG OXIDIZERS - CHLORINE LIQUID OXYGEN

HAZARDOUS DECOMPOSITION PRODUCTS: OXIDES OF CARBON

HAZARDOUS POLYMERIZATION: B --WILL NOT OCCUR — --MAY OCCUR — CONDITIONS TO AVOID: N/A

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: CLEAN UP WITH AMMONIA/ALCOHOL SOLVENTS. VENTILATE IF SOMEWHAT USED HAS TOXIC VAPORS.

WASTE DISPOSAL METHOD: DISPOSE OF IN APPROVED LANDFILL

PREMALUBE-1

CONTINUED — SECTION VIII - SPILL OR LEAK PROCEDURES — PAGE 04

NEUTRALIZING AGENT: N/A

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION: ADEQUATE

RESPIRATORY PROTECTION: N/A

PROTECTIVE GLOVES: NONE NEEDED

EYE PROTECTION: N/A

OTHER PROTECTION: N/A

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE: 20 F --MIN — 32 F --MAX — --AMBIENT — X --HEATED — --REFRIGERATED — --OUTDOOR

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING: N/A

OTHER PRECAUTIONS: KEEP OUT OF REACH OF CHILDREN. LABEL BEFORE USING PRODUCT

SECTION XI - TRANSPORTATION - FOR FUTURE USE

APPLICABLE REGULATIONS: --49 CFR — --IMDG — --TARIFF G.D. — --IATA — --MILITARY AND IAPG FX-08

SHIPPING NAME: HAZARD CLASS — ID NUMBER — SHIPPING QTY

PREMIALUSE

(CONTINUED) SECTION XI - TRANSPORTATION + [illegible] (USE USE) PAGE 05

CLASS: LIMITED QTY

UNIT CONTAINER

OUT 'N'L CONTAINER NET EXPLOSIVE WT

AEROSOL PROPELLANT(S)

SECTION XII REFERENCES

NA

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT KNOWLEDGE HOWEVER NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF

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MATERIAL SAFETY DATA SHEET CLOROX PAGE : 01

[illegible]	4373	I DATE OF ISSUE [illegible]	SUPERSEDES [illegible]

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS: N/A
TRADE NAME & SYNONYMS: CLOROX

CHEMICAL FAMILY: TANNIC-ACETATE MIXTURE
FORMULA: A --MIXTURE

MANUFACTURER NAME: CERTRED LABS. DIV. OF NCH CORP
ADDRESS (NUMBER, STREET, CITY, STATE & ZIP CODE): BOX 19310, IRVING, TEXAS 75015

PREPARED BY: RICHARD STRILEY/J.SHEW
PRODUCT CODE NUMBER: 4373
EMERGENCY TELEPHONE NUMBER: 214-630-1140, EXT 512

SECTION II - HAZARDOUS INGREDIENTS

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS AS THE PRODUCT MIXTURE HAS NOT BEEN TESTED AS A WHOLE

CHEMICAL NAME INGREDIENTS	HAZARD	TLV	PEL	CAS#
TANNIC ACID	IRRITANT	NOT EST	NOT EST	1401-55-4
ORALIC ACID	TOXICANT	NOT EST	1MG/M3	2 144-62-7

SECTION III - PHYSICAL DATA

BOILING PT (FAHRENHEIT)	215	SPEC GRAVITY H2O=1	1.100
VAPOR PRESSURE (MM HG)	18	COLOR	TAN
VAPOR DENSITY (AIR=1)	0.6	ODOR	LATEX

CLOROX

CONTINUED SECTION III - PHYSICAL DATA PAGE : 02

PH @ 100%	1-2	SOLUBILITY GRADE	
PERCENT VOLATILE BY VOLUME (%)	40	EVAPORATION RATE (BU AE = 1)	0.10
SOLUBILITY IN WATER	COMPLETE		
VISCOSITY	SLIGHT-VISCOUS		

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT METHOD USED: NON-FLAM	FLAMMABLE LIMITS	LEL: N/A	UEL: N/A

EXTINGUISHING MEDIA: A --FOAM --FOAM B --CO2 C --CHEMICAL D --SPRAY WATER --OTHER

SPECIAL FIRE FIGHTING PROCEDURES
ALTHOUGH PRODUCT IS NON-FLAMMABLE TREAT AS ANY CHEMICAL FIRE WEAR A SELF-CONTAINED BREATHING AND FULL PROTECTIVE GEAR TO AVOID EXPOSURE TO POSSIBLE HAZARDOUS COMBUSTION PRODUCTS

UNUSUAL FIRE & EXPLOSION HAZARDS
SPRAY EXPOSED CONTAINERS WITH WATER SPRAY TO AVOID STEAM PRODUCTION

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE
NOT ESTABLISHED FOR MIXTURE SEE SECTION II

EFFECTS OF OVEREXPOSURE
- ACUTE - SHORT TERM EXPOSURE:
INHALATION - MIST SITUATION MAY CAUSE IRRITATION TO RESPIRATORY TRACT MAY CAUSE COUGHING AND SNEEZING
SKIN CONTACT- MAY CAUSE MILD IRRITATION CONTACT WITH OPEN WOUNDS CAN PROMOTE ABSORPTION AND SYSTEMIC EFFECTS IN ALTERNATED BURNED VICTIMS OBSERVED LIVER DAMAGE WAS ATTRIBUTED TO ABSORPTION OF TANNIC ACID THROUGH BURNED SKIN
EYE CONTACT- MAY CAUSE REDNESS AND TEARING WITH POSSIBLE PAIN AND BLURRED VISION
INGESTION- TOXIC MAY CAUSE GASTROINTESTINAL DISORDERS INCLUDING NAUSEA AND VOMITING MASSIVE INGESTION CAN CAUSE SHOCK AND COLLAPSE
- CHRONIC - LONG TERM EXPOSURE:
MARKED IRRITATION TO SKIN AND EYES. PATHOLOGICAL FINDINGS IN EXPERIMENTAL

CLOROX

CONTINUED SECTION V - HEALTH HAZARD DATA PAGE : 03

ANIMALS SHOWN EVIDENCE OF GASTRITIS AND LIVER DAMAGE
PERSONS WITH PRE-EXISTING SKIN OR EYE DISORDERS OR IMPAIRED KIDNEY LIVER AND RESPIRATORY FUNCTION MAY BE MORE SUSCEPTABLE TO THE EFFECTS OF THE SUBSTANCE
SEE SECTION VI FOR MORE INFORMATION

PRIMARY ROUTE OF ENTRY -- INHALATION X -- INGESTION X -- ABSORPTION

EMERGENCY & FIRST AID PROCEDURES
INHALATION
GET TO FRESH AIR AND TREAT SYMPTOMATICALLY IF BREATHING IS LABORED GIVE OXYGEN OR ARTIFICIAL RESPIRATION SEE A PHYSICIAN IF SYMPTOMS OCCUR

EYE CONTACT
FLUSH WITH LARGE AMOUNTS OF WATER FOR 15 MINUTES LIFTING UPPER AND LOWER LIDS OCCASIONALLY GET MEDICAL ATTENTION IMMEDIATELY TREATMENT IS MOST EFFECTIVE WITHIN ONE MINUTE

SKIN CONTACT
THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER REMOVE CONTAMINATED CLOTHING LAUNDER CONTAMINATED CLOTHING BEFORE REUSE APPLY EMOLLIENT SKIN CREAM

INGESTION
GIVE TWO GLASSES OF WATER TO DILUTE CONTENTS OF STOMACH DO NOT INDUCE VOMITING SEE A PHYSICIAN AT ONCE

NOTES TO PHYSICIAN
ADDITION OF BASIC NEUTRALIZER IS NOT RECOMMENDED DUE TO ALKALI SALTS OF ORALIC ACID ARE JUST AS TOXIC AS ACIDIC FORM

SECTION VI - TOXICITY INFORMATION

TANNIC ACID
ORAL-RAT LD50 [illegible] ORAL-RAT LD50 [illegible]
ORAL-MOUSE LD50 [illegible] ORAL-MOUSE LD50 [illegible]
SKIN-RAT LD50 [illegible]
EYE DAMAGE
TERATOGENIC DATA CITED :
ORALIC ACID
ORAL-RAT LD50 [illegible]
ORAL-RAT LD50 [illegible]
SKIN-RAT LD50 [illegible]
TANNIC ACID PRODUCED LIVER TUMORS IN RATS FOLLOWING SUBCUTANEOUS INJECTION OF [illegible] TANNIC PRODUCED LIVER TUMORS NO ADEQUATE FUNCTIONS [illegible] ORAL STUDIES ON LABS REPORTS ON FOOD HOLOGICAL STUDIES [illegible] DO NOT INCLUDE TANNIC ACID IN THE [illegible] OF WHICH IS CURRENTLY CONSIDERED [illegible] WAS SUFFICIENT EVIDENCE OF CARCINOGENICITY IN EXPERIMENTAL ANIMALS SUPPLEMENT 4 1982 APPENDIX D SEE SECTION XII

CLOROX

SECTION VII - REACTIVITY DATA PAGE : 04

STABILITY: X --STABLE --UNSTABLE CONDITIONS TO AVOID
STORE CONTAINERS TIGHTLY CLOSED

INCOMPATIBILITY (MATERIALS TO AVOID)
STORE SEPARATE LIGHT SENSITIVE AND BLEACH

HAZARDOUS DECOMPOSITION PRODUCTS
CARBON MONOXIDE, ACID SMOKE AND FUMES

HAZARDOUS	WILL NOT	MAY	CONDITIONS TO AVOID
	X --OCCUR	--OCCUR	

POLYMERIZATION
NO

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
CONTAIN LEAK AND MOP UP SPILL AND PLACE IN A LABELED CONTAINER CLEAN UP RESIDUE WITH DETERGENT AND WATER

WASTE DISPOSAL METHOD
DISPOSE OF IN ACCORDANCE WITH FEDERAL STATE AND LOCAL REGULATIONS

NEUTRALIZING AGENT
ADD CAUTIOUSLY A SOLUTION OF BLEACH (NAOCL) OR SODA ASH WHILE STIRRING UNTIL PH IS AT 7

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION
GENERAL EXHAUST IS MORE THAN ADEQUATE TO PROTECT WORKER FROM EXPOSURE TO LEVEL ABOVE PERMISSIBLE EXPOSURE LIMITS

RESPIRATORY PROTECTION
A RESPIRATOR IS NOT REQUIRED IN THE NORMAL USE OF THE PRODUCT USE A NIOSH APPROVED MASK FOR SPILL MISTS

PROTECTIVE GLOVES
RUBBER OR NITRILE GLOVES SHOULD BE WORN

EYE PROTECTION
CHEMICAL GOGGLES SHOULD BE WORN DEPENDING ON SEVERITY OF EXPOSURE

GALLIC

CONTINUED SECTION IX - SPECIAL - SECTION INFORMATION PAGE : 06

OTHER PROTECTION
APRON SHOULD BE WORN DEPENDING ON SEVERITY
OF EXPOSURE

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE AMBIENT HEATED REFRIGERATED OUTDOOR
100 F --MAX 35 F --MIN X

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
KEEP BARK TIGHTLY CLOSED.

OTHER PRECAUTIONS
KEEP OUT OF REACH OF CHILDREN.
READ ENTIRE LABEL BEFORE USING PRODUCT

SECTION XI - TRANSPORTATION - FOR FUTURE USE!

APPLICABLE REGULATIONS
--DOT CFR --IMDG --TARIFF S.B --IATA --MILITARY AIR MFC 71-5

SHIPPING NAME

HAZARD CLASS ID NUMBER REPORT QTY

LABELS LIMITED QTY

UNIT CONTAINER

DOT SPC CONTAINER NET EXPLOSIVE WT

ADDITIONAL PROPELLANTS:

SECTION XII - REFERENCES

1 DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS 6TH EDITION
N IRVING SAX
2 THRESHOLD LIMIT VALUES AND BIOLOGICAL EXPOSURE INDICES 1984-1987
3 VENDOR S INDEX

GALLIC

CONTINUED SECTION XII - REFERENCES PAGE : 06

CONTINUED FROM SECTION IX
GALLIC ACID, THE WASH HYDROLYTIC PRODUCT OF TANNIC ACID DID NOT REDUCE TUMORS WHEN GIVEN SUBCUTANEOUSLY. SUBMITTING INTACT TANNIC ACID IS NECESSARY FOR ANY TUMOR-REDUCING EFFECT. DATA INDICATING THAT TANNIC ACID IS NOT ABSORBED AFTER ORAL ADMINISTRATION, BUT IS FIRST HYDROLYZED TO GALLIC ACID THUS MAY EXPLAIN THE NEGATIVE CARCINOGENICITY FOUNDED FOLLOWING ORAL OR DERMAL EXPOSURE

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF

CONTINUED LABEL DIV OF HEN CORP ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE, STORAGE OR DISPOSAL OF THE PRODUCT IN A MANNER NOT RECOMMENDED ON THE PRODUCT LABEL. USER ASSUMES ALL RISKS ASSOCIATED WITH SUCH UNRECOMMENDED USE, STORAGE, OR DISPOSAL OF THE PRODUCT

MATERIAL SAFETY DATA SHEET SAP-SOL APPROVAL (ST) PAGE : 01

DATE OF ISSUE SUPERSEDES
(MO/DAY) (MO/DAY)

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS TRADE NAME & SYNONYMS
N/A SAP-SOL APPROVAL (ST)

CHEMICAL FAMILY FORMULA
AZEOTROPIC SOLVENT MIXTURE --MIXTURE

MANUFACTURER'S NAME
CENTURY LABS. DIV OF MCK CORP

ADDRESS (NUMBER STREET, CITY, STATE & ZIP CODE)
BOX 152170
IRVING, TEXAS 75015

PREPARED BY PRODUCT CODE NUMBER EMERGENCY TELEPHONE NUMBER
DON MORGAN'S CHEMIST N/A 214-438-6166
EXT 613

SECTION II- HAZARDOUS INGREDIENTS

CHEMICAL NAME INGREDIENTS %(W) O TYPE TLV- PEL- CAS#

1,1,1-TRICHLOROETHANE PRESENT 350 PPM (350 PPM (71-55-6

SECTION III - PHYSICAL DATA

BOILING PT (FAHRENHEIT) 163 SPEC GRAVITY (H2O=1) 1.350

VAPOR PRESSURE (MM HG) 100 COLOR WATER WHITE

VAPOR DENSITY (AIR=1) 4.6 ODOR CHLOR HYDROCARBON

SAP-SOL APPROVAL (ST)

CONTINUED SECTION III - PHYSICAL DATA PAGE : 02

PH @ 100% N/A QUALITY TRANSPARENT

PERCENT VOLATILE BY VOLUME (%) 100 EVAPORATION RATE (BU AE = 1) 0.75

SOLUBILITY IN WATER INSOLUBLE

VISCOSITY VISCOUS

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT (METHOD USED) FLAMMABLE LIMITS LEL UEL
NONE C.C.C 0% @ 25.C 15.7 @ 100

EXTINGUISHING MEDIA: "ALCOHOL"
--FOAM --FOAM --CO2 --CHEMICAL DRY --SPRAY WATER X --OTHER

SPECIAL FIRE FIGHTING PROCEDURES

POSITIVE PRESSURE, SELF-CONTAINED RESPIRATORY EQUIPMENT WHEN FIGHTING FIRES IN CONFINED AREAS TO PREVENT EXPOSURE TO HAZARDOUS DECOMPOSITION PRODUCTS

UNUSUAL FIRE & EXPLOSION HAZARDS

CAN FORM PHOSGENE UNDER CERTAIN CONDITIONS OF HEAT

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

ACGIH 350 PPM (

EFFECTS OF OVEREXPOSURE

- ACUTE - (SHORT TERM EXPOSURE)

OVEREXPOSURE CAN CAUSE DIZZINESS DRUNKENESS AND DROWSINESS, UNCONSCIOUSNESS AND EVEN DEATH AT EXTREME DOSES. ABSORPTION THROUGH SKIN IS NOT A SIGNIFICANT ROUTE OF EXPOSURE - MILDLY IRRITATING ON CONTACT. INGESTION IS AN UNLIKELY ROUTE OF EXPOSURE BECAUSE THE PRODUCT IS AN AEROSOL. INGESTION OF SMALL QUANTITIES IS NOT LIKELY TO BE TOXIC. OVEREXPOSURE TO EYES CAN CAUSE MILD IRRITATION BUT NO CORNEAL INJURY LIKELY

- CHRONIC - (LONG TERM EXPOSURE)

INHALATION IS THE MAJOR ROUTE OF EXPOSURE - LOW SYSTEMIC TOXICITY. ACUTE EXPOSURES IN THE 1000 PPM RANGE CAUSE NARCOSIS. PROLONGED OR REPEATED SKIN CONTACT CAN CAUSE DERMATITIS THROUGH DEFATTING OF SKIN

SAP-SOL APPROVAL (ST)

CONTINUED SECTION V - HEALTH HAZARD DATA PAGE : 03

ON EYES OVEREXPOSURE MAY CAUSE CORNEAL INJURY

PRIMARY ROUTE OF ENTRY X -- INHALATION --- INGESTION -- ABSORPTION

EMERGENCY & FIRST AID PROCEDURES

INHALATION

REMOVE TO FRESH AIR. IF BREATHING HAS STOPPED ADMINISTER RESPIRATION OR OXYGEN IF AVAILABLE

EYE CONTACT

FLUSH WITH WATER HOLDING EYELIDS APART FOR 15 MINUTES. SEE A PHYSICIAN IF IRRITATION PERSISTS

SKIN CONTACT

REMOVE CONTAMINATED CLOTHING AND FLUSH EXPOSED AREAS WITH WATER FOR 5 TO 15 MINUTES

INGESTION

DO NOT INDUCE VOMITING. CALL PHYSICIAN AND OBTAIN MEDICAL ATTENTION

NOTES TO PHYSICIAN

BECAUSE RAPID ABSORPTION MAY OCCUR THROUGH LUNGS THE DECISION OF WHETHER TO INDUCE VOMITING OR NOT SHOULD BE MADE BY A PHYSICIAN. IF LAVAGE IS PERFORMED, SUBJECT INSTRUMENTAL AIRWAY ESPECIALLY CONTROL. BARBITURATES MUST BE AVOIDED AGAINST TOXICITY. NO SPECIFIC ANTIDOTE. SUPPORTIVE CARE. TREATMENT BASED ON JUDGEMENT OF THE PHYSICIAN IN RESPONSE TO REACTIONS OF THE PATIENT

SECTION VI - TOXICITY INFORMATION

1,1,1-TRICHLOROETHANE
ORL-RAT LD50 10 000 MG/KG (
SKN-RBT LD50 10 000 MG/KG (
EYE-RBS 250 MG/24H 3
ORL-MOUSE TDLO 520 MG/KG 7

SECTION VII - REACTIVITY DATA

STABILITY X --STABLE --UNSTABLE, CONDITIONS TO AVOID

AVOID OPEN FLAMES OR OTHER HIGH TEMPERATURE SOURCES WHICH INDUCE THERMAL DECOMPOSITION

INCOMPATIBLE MATERIALS TO AVOID
WATER - LONG TERM CONTACT CAN PRODUCE CORROSIVE ACID

HAZARDOUS DECOMPOSITION PRODUCTS
HAZARDOUS DECOMPOSITION PRODUCTS HYDROGEN CHLORIDE AND VERY SMALL AMOUNTS OF PHOSGENE AND CHLORINE

SAP-SOL APPROVAL (ST)

CONTINUED SECTION VII - REACTIVITY DATA PAGE : 04

WILL NOT MAY CONDITIONS TO AVOID
HAZARDOUS X --OCCUR --OCCUR

POLYMERIZATION N/A

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
SMALL LEAKS MOP UP WIPE UP OR SOAK UP IMMEDIATELY. REMOVE TO OUT-OF-DOORS
LARGE SPILLS EVACUATE AREA. CONTAIN LIQUID. TRANSFER TO CLOSED METAL CONTAINERS. KEEP OUT OF WATER SUPPLY

WASTE DISPOSAL METHOD
OR DISPOSE OF PREFERENCE) SEND SOLVENT TO LICENSED RECLAIMER INCINERATE. EVAPORATE VERY SMALL QUANTITIES OR SEND TO APPROVED LANDFILL SUBJECT IN COMPLIANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. DUMPING INTO SEWERS ON THE GROUND OR INTO ANY BODY OF WATER IS STRONGLY DISCOURAGED AND MAY BE ILLEGAL

NEUTRALIZING AGENT

N/A

SECTION IX - SPECIAL PROTECTION INFORMATION

ENGINEER VENTILATION
CONTROL VAPORS TO STANDARD

RESPIRATORY PROTECTION
APPROVED ORGANIC VAPOR-TYPE RESPIRATOR REQUIRED IN ABSENCE OF ADEQUATE ENVIRONMENTAL CONTROL. FOR EMERGENCIES A POSITIVE-PRESSURE BREATHING APPARATUS OR A FULL-FACE RESPIRATOR WITH AN APPROVED ORGANIC VAPOR CANISTER IS RECOMMENDED

PROTECTIVE GLOVES
VITON NEOPRENE OR POLYVINYL ACETATE PVA
PRESENCE OR PROLONGED CONTACT

EYE PROTECTION
SAFETY GLASSES. IT IS RECOMMENDED THAT AN EYE-WASH STATION BE AVAILABLE

OTHER PROTECTION
BOOTS AND APRON DEPENDING UPON THE EXTENT AND SEVERITY OF EXPOSURE LIKELY

[illegible]

SECTION X - STORAGE [illegible]

STORAGE TEMPERATURE [illegible] HEATED REFRIGERATED OUTDOOR
[illegible]

PRECAUTIONS 1-6 OZ TAKEN IN HANDLING & STORING
AVOID BREATHING VAPORS. STORE IN A COOL DRY
PLACE. VAPORS ARE HEAVIER THAN AIR AND WILL
COLLECT IN LOW AREAS. DO NOT ENTER THESE AREAS
WHERE VAPORS ARE SUSPECTED. DO NOT USE WITH
POWDERED ZINC OR ALUMINUM

OTHER PRECAUTIONS
ALWAYS FOLLOW LABEL DIRECTIONS. KEEP OUT OF REACH
OF CHILDREN

SECTION XI - TRANSPORTATION - (FOR FUTURE USE)

APPLICABLE REGULATIONS
--[illegible] --[illegible] --TARIFF [illegible] --IATA --MILITARY AIR [illegible]

SHIPPING NAME

HAZARD CLASS ID NUMBER EXPORT QTY

LABELS LIMITED QTY

UNIT CONTAINER

DOT [illegible] CONTAINER NET EXPLOSIVE WT

APPROVAL PROPELLANTS

SECTION XII - REFERENCES

1 [illegible]
2 DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS 6TH EDITION
[illegible]

CERTIFIED LABS. DIV. OF NEW CORP. ASSUMES NO RESPONSIBILITY
FOR PERSONAL INJURY OR PROPERTY DAMAGE TO VENDEES, USER OR
THIRD PARTIES CAUSED BY THE MATERIAL. SUCH VENDEES OR USERS
ASSUME ALL RISKS ASSOCIATED WITH THE USE OF THE MATERIAL

MATERIAL SAFETY DATA SHEET : VISION PAGE : 01

(006293-0144 -P0000584-1810)

DATE OF ISSUE	SUPERSEDES
12/02/88	11/11/87

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS
N/A

TRADE NAME & SYNONYMS
VISION

CHEMICAL FAMILY
ALCOHOLIC SOLUTION

FORMULA
X<--MIXTURE

MANUFACTURERS NAME:
CERTIFIED LABS. DIV. OF NCH CORP.

ADDRESS (NUMBER, STREET, CITY, STATE & ZIP CODE)
BOX 152170
IRVING, TEXAS 75015

PREPARED BY	PRODUCT CODE NUMBER	EMERGENCY TELEPHONE NUMBER
KEVIN UHL/T.S.CHEMIST	1810	214-438-1381

SECTION II- HAZARDOUS INGREDIENTS

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS AS THE PRODUCT MIXTURE HAS NOT BEEN TESTED AS A WHOLE.

CHEMICAL NAME (INGREDIENTS)	HAZARD	TLV*	PEL*	CAS#
METHANOL	TOXIC/FLAM	200PPM	260MG/M3	67-56-1
ETHYLENE GLYCOL	IRRITANT	50PPM	125MG/M3	107-21-1

SECTION III - PHYSICAL DATA

BOILING PT.(FAHRENHEIT)	148	SPEC GRAVITY (H2O=1)	0.950
VAPOR PRESSURE (MM HG).	42	COLOR	GREEN
VAPOR DENSITY (AIR=1)	1.1	ODOR	ALCOHOL

VISION

(CONTINUED) SECTION III - PHYSICAL DATA PAGE : 02

PH @ 100%	7.1	CLARITY	CLEAR
PERCENT VOLATILE BY VOLUME (%)	99	EVAPORATION RATE (BU AC = 1)	3.5
SOLUBILITY IN WATER	COMPLETE		
VISCOSITY	NON-VISCOUS		

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT (METHOD USED)	FLAMMABLE LIMITS	LEL	UEL
58 F T.C.C.		6.0	36.5

EXTINGUISHING MEDIA "ALCOHOL"
X<--FOAM <--FOAM X<--CO2 X<--DRY CHEMICAL X<--WATER SPRAY <--OTHER

SPECIAL FIRE FIGHTING PROCEDURES

IT IS ALWAYS RECOMMENDED THAT A SELF-CONTAINED BREATHING APPARATUS BE EMPLOYED DURING CHEMICAL FIRES.

UNUSUAL FIRE & EXPLOSION HAZARDS

N/A

NFPA HAZARD RATING (0=INSIGNIFICANT;1=SLIGHT,2=MODERATE;3=HIGH;4=EXTREME):
1 <--HEALTH 3 <--FLAMMABILITY 0 <--REACTIVITY <--SPECIAL

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

NOT ESTABLISHED FOR MIXTURES. SEE SECTION II.

EFFECTS OF OVEREXPOSURE

- ACUTE - (SHORT TERM EXPOSURE)

EYES - CAN CAUSE SEVERE IRRITATION, REDNESS, TEARING.
SKIN - CONTACT MAY CAUSE SLIGHT IRRITATION AND REDDENING.
BREATHING - EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL AND RESPIRATORY IRRITATION, DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE, POSSIBLE UNCONSCIOUSNESS, AND EVEN ASPHYXIATION.
SWALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, DIARRHEA, BLINDNESS, COMA, AND DEATH.

- CHRONIC - (LONG TERM EXPOSURE)

CHRONIC OVEREXPOSURE (VIA INGESTION OR MASSIVE CONTINUOUS INHALATION)

VISION

(CONTINUED) SECTION V - HEALTH HAZARD DATA PAGE : 03

CAN CAUSE BLURRED VISION AND BLINDNESS. CHRONIC SKIN CONTACT CAN CAUSE DERMATITIS.

PRIMARY ROUTE OF ENTRY: <-- INHALATION <-- INGESTION <-- ABSORPTION

EMERGENCY & FIRST AID PROCEDURES

INHALATION :
IF BREATHED: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STOPPED GIVE ARTIFICIAL RESPIRATION. KEEP PERSON WARM, QUIET AND GET MEDICAL ATTENTION.

EYE CONTACT:
IF IN EYES: FLUSH WITH LARGE AMOUNTS OF WATER, LIFTING UPPER AND LOWER LIDS OCCASIONALLY, GET MEDICAL ATTENTION.

SKIN CONTACT:
IF ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. LAUNDER CONTAMINATED CLOTHING BEFORE RE-USE.

INGESTION :
IF SWALLOWED: IMMEDIATELY DRINK TWO GLASSES OF WATER AND INDUCE VOMITING BY EITHER GIVING IPECAC SYRUP OR BY PLACING FINGER AT BACK OF THROAT. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION IMMEDIATELY.

NOTES TO PHYSICIAN :
GASTRIC LAVAGE AND SODIUM BICARBONATE TO COMBAT ACIDOSIS IS INDICATED. HEMODIALYSES IF ALKALINE TREATMENT IS DELAYED MAY BE BENEFICIAL. PROTECT PATIENT'S EYES FROM LIGHT.

SECTION VI - TOXICITY INFORMATION

PRODUCT CONTAINS CHEMICAL LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN BY:

IARC	NTP	OSHA	ACGIH	OTHER
<--YES	<--YES	<--YES	<--YES	<--YES
X<--NO	X<--NO	X<--NO	X<--NO	X<--NO

METHANOL
ORL-HMN LDLO: 340MG/KG M3 2.
IHL-MAN LDLO: 8600MG 2.
UNK-MAN LDLO: 868MG/KG 2.
ORL-RAT LD50: 13GM/KG 2.
ETHYLENE GLYCOL
ORL-HMN LDLO: 710MG/KG 2.
IHL-MAN TCLO: 10,000MG/M3 IRR 2.
ORL-RAT LD50: 8G/KG 3.

SECTION VII - REACTIVITY DATA

STABILITY	X<--STABLE	<--UNSTABL	CONDIOTIONS TO AVOID
	N/A		

VISION

(CONTINUED) SECTION VII - REACTIVITY DATA PAGE : 04

INCOMPATIBILITY (MATERIALS TO AVOID)

OPEN FLAME

HAZARDOUS DECOMPOSITION PRODUCTS

CARBON MONOXIDE UPON BURNING

HAZARDOUS POLYMERIZATION	WILL NOT	MAY	CONDITIONS TO AVOID
	X <--OCCUR	<--OCCUR	
	N/A		

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
EXTINGUISH ALL SOURCES OF IGNITION. VENTILATE AREA AND CONTAIN SPILL. PICK UP AND PLACE IN LABELED CONTAINER. REUSE IF POSSIBLE.

WASTE DISPOSAL METHOD
DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL POLLUTION REGULATIONS.

NEUTRALIZING AGENT

LARGE AMOUNTS OF WATER WILL NEUTRALIZE.

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION
TYPICAL USE OF THIS PRODUCT DOES NOT REQUIRE SPECIAL VENTILATION. LOCAL EXHAUST IS SUFFICIENT.

RESPIRATORY PROTECTION
TYPICAL USE OF PRODUCT DOES NOT REQUIRE USE OF RESPIRATION. HOWEVER, IN EMERGENCY SITUATIONS 2,000PPM: SA/SCBA
10,000PPM: SAF/SCBAF
25,000PPM: SAF/PD,PP,CF
ESCAPE: SCBA

PROTECTIVE GLOVES
GLOVES SHOULD BE WORN DEPENDING UPON SEVERITY OF EXPOSURE.

EYE PROTECTION
GOGGLES SHOULD BE WORN DEPENDING UPON SEVERITY OF EXPOSURE.

VISION

(CONTINUED) SECTION IX - SPECIAL PROTECTION INFORMATIOPAGE : 05

OTHER PROTECTION
N/A

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE	INDOOR	HEATED	REFRIGERATED	OUTDOOR
100 F.<--MAX 0 F.<--MIN	X			

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
KEEP AWAY FROM OPEN FLAME.
KEEP OUT OF EYES.
ALWAYS KEEP DRUM TIGHTLY CLOSED WHEN NOT BEING USED.

OTHER PRECAUTIONS
KEEP OUT OF REACH OF CHILDREN.
READ ENTIRE LABEL BEFORE USING.

SECTION XI - REGULATORY INFORMATION

CHEMICAL NAME	C.A.S. NUMBER	UPPER % LIMIT
METHANOL	67-56-1	40
ETHYLENE GLYCOL	107-21-1	5

THOSE INGREDIENTS LISTED ABOVE ARE SUBJECT TO THE REPORTING REQUIREMENTS OF 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372.
IF UE (USE EXEMPTION) APPEARS UNDER UPPER % LIMIT, END USERS ARE EXEMPT FROM NOTIFICATION BECAUSE THE PRODUCT IS USED AND LABELED FOR ROUTINE JANITORIAL WORK, OR THE PRODUCT IS USED AND LABELED FOR FACILITY GROUNDS MAINTENANCE (SUCH AS FERTILIZERS AND HERBICIDES), OR THE PRODUCT IS USED AND LABELED FOR MAINTAINING MOTOR VEHICLES.

SECTION XII - TRANSPORTATION - (FOR FUTURE USE)

APPLICABLE REGULATIONS
<--49 CFR <--IMCO <--TARIFF 6 D <--IATA <--MILITARY AIR (AFR 71-4)

SHIPPING NAME

HAZARD CLASS	ID NUMBER	REPORT QTY

VISION

(CONTINUED) SECTION XII - TRANSPORTATION - (FOR FUTURE USE) PAGE : 06

LABELS	LIMITED QTY
UNIT CONTAINER	
DOT SPS CONTAINER	NET EXPLOSIVE WT
AEROSOL PROPELLANT(S)	

SECTION XIII - REFERENCES

1. THRESHOLD LIMIT VALUE FOR CHEMICAL SUBSTANCES IN THE WORK ENVIRONMENT, 2ND EDITION, ACGIH, 1985.
2. DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, 6TH EDITION N. IRVING SAX.
3. VENDOR'S MSDS.

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CERTIFIED LABS, DIV. OF NCH CORP. ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE, STORAGE OR DISPOSAL OF THE PRODUCT IN A MANNER NOT RECOMMENDED ON THE PRODUCT LABEL. USERS ASSUME ALL RISKS ASSOCIATED WITH SUCH UNRECOMMENDED USE, STORAGE, OR DISPOSAL OF THE PRODUCT.

MATERIAL SAFETY DATA SHEET : VISION PAGE : 01

(208293-0134 -P0000584-1810)

DATE OF ISSUE	SUPERSEDES
12/02/88	11/11/87

SECTION I - GENERAL INFORMATION

CHEMICAL NAME & SYNONYMS
N/A

TRADE NAME & SYNONYMS
VISION

CHEMICAL FAMILY
ALCOHOLIC SOLUTION

FORMULA
X<--MIXTURE

MANUFACTURERS NAME:
CERTIFIED LABS. DIV. OF NCH CORP.

ADDRESS (NUMBER, STREET, CITY, STATE & ZIP CODE)
BOX 152170
IRVING, TEXAS 75015

PREPARED BY:	PRODUCT CODE NUMBER	EMERGENCY TELEPHONE NUMBER
KEVIN UHL/T.S.CHEMIST	1810	214-438-1381

SECTION II- HAZARDOUS INGREDIENTS

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS AS THE PRODUCT MIXTURE HAS NOT BEEN TESTED AS A WHOLE.

CHEMICAL NAME (INGREDIENTS)	HAZARD	TLV*	PEL*	CAS#
METHANOL	TOXIC/FLAM	200PPM	260MG/M3	67-56-1
ETHYLENE GLYCOL	IRRITANT	50PPM	125MG/M3	107-21-1

SECTION III - PHYSICAL DATA

BOILING PT.(FAHRENHEIT)	148	SPEC GRAVITY (H2O=1)	0.950
VAPOR PRESSURE (MM HG).	42	COLOR	GREEN
VAPOR DENSITY (AIR=1)	1.1	ODOR	ALCOHOL

VISION

(CONTINUED) SECTION III - PHYSICAL DATA PAGE : 02

PH @ 100%	7.1	CLARITY	CLEAR
PERCENT, VOLATILE BY VOLUME (%)	99	EVAPORATION RATE (BU AC = 1)	3.5
SOLUBILITY IN WATER	COMPLETE		
VISCOSITY	NON-VISCOUS		

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT (METHOD USED)	FLAMMABLE LIMITS	LEL	UEL
58 F T.C.C.		6.0	36.5

EXTINGUISHING MEDIA "ALCOHOL"
X<--FOAM <--FOAM X<--CO2 X<--DRY CHEMICAL X<--WATER SPRAY <--OTHER

SPECIAL FIRE FIGHTING PROCEDURES

IT IS ALWAYS RECOMMENDED THAT A SELF-CONTAINED BREATHING APPARATUS BE EMPLOYED DURING CHEMICAL FIRES.

UNUSUAL FIRE & EXPLOSION HAZARDS

N/A

NFPA HAZARD RATING (0=INSIGNIFICANT;1=SLIGHT;2=MODERATE;3=HIGH;4=EXTREME):
1 <--HEALTH 3 <--FLAMMABILITY 0 <--REACTIVITY <--SPECIAL

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE :

NOT ESTABLISHED FOR MIXTURES. SEE SECTION II.

EFFECTS OF OVEREXPOSURE

- ACUTE - (SHORT TERM EXPOSURE)

EYES - CAN CAUSE SEVERE IRRITATION, REDNESS, TEARING.
SKIN - CONTACT MAY CAUSE SLIGHT IRRITATION AND REDDENING.
BREATHING - EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL AND RESPIRATORY IRRITATION, DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE, POSSIBLE UNCONSCIOUSNESS, AND EVEN ASPHYXIATION.
SWALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, DIARRHEA, BLINDNESS, COMA, AND DEATH.

- CHRONIC - (LONG TERM EXPOSURE)

CHRONIC OVEREXPOSURE (VIA INGESTION OR MASSIVE CONTINUOUS INHALATION)

VISION

(CONTINUED) SECTION V - HEALTH HAZARD DATA PAGE : 03

CAN CAUSE BLURRED VISION AND BLINDNESS. CHRONIC SKIN CONTACT CAN CAUSE DERMATITIS.

PRIMARY ROUTE OF ENTRY: <-- INHALATION <-- INGESTION <-- ABSORPTION

EMERGENCY & FIRST AID PROCEDURES

INHALATION:
IF BREATHED. IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STOPPED GIVE ARTIFICIAL RESPIRATION. KEEP PERSON WARM, QUIET AND GET MEDICAL ATTENTION.

EYE CONTACT:
IF IN EYES: FLUSH WITH LARGE AMOUNTS OF WATER, LIFTING UPPER AND LOWER LIDS OCCASIONALLY. GET MEDICAL ATTENTION.

SKIN CONTACT:
IF ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. LAUNDER CONTAMINATED CLOTHING BEFORE RE-USE.

INGESTION:
IF SWALLOWED: IMMEDIATELY DRINK TWO GLASSES OF WATER AND INDUCE VOMITING BY EITHER GIVING IPECAC SYRUP OR BY PLACING FINGER AT BACK OF THROAT. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION IMMEDIATELY.

NOTES TO PHYSICIAN
GASTRIC LAVAGE AND SODIUM BICARBONATE TO COMBAT ACIDOSIS IS INDICATED. HEMODIALYSES IF ALKALINE TREATMENT IS DELAYED MAY BE BENEFICIAL. PROTECT PATIENT'S EYES FROM LIGHT.

SECTION VI - TOXICITY INFORMATION

PRODUCT CONTAINS CHEMICAL LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN BY:

IARC	NTP	OSHA	ACGIH	OTHER
<--YES	<--YES	<--YES	<--YES	<--YES
X<--NO	X<--NO	X<--NO	X<--NO	X<--NO

METHANOL
ORL-HMN LDLO: 340MG/KG/W3 2.
IML-MAN LDLO: 8800MG 2.
UNK-MAN LDLO: 868MG/KG 2.
ORL-RAT LD50: 13GM/KG 2.
ETHYLENE GLYCOL
ORL-HMN LDLO: 710MG/KG 2.
IML-MAN TCLO: 10,000MG/M3 IRR 2.
ORL-RAT LD50: 6G/KG 3.

SECTION VII - REACTIVITY DATA

	<--STABLE	<--UNSTABL	CONDIDTIONS TO AVOID
STABILITY	X<--STABLE	<--UNSTABL	CONDIDTIONS TO AVOID
	N/A		

VISION

(CONTINUED) SECTION VII - REACTIVITY DATA PAGE : 04

INCOMPATIBILITY (MATERIALS TO AVOID)

OPEN FLAME

HAZARDOUS DECOMPOSITION PRODUCTS

CARBON MONOXIDE UPON BURNING

	WILL NOT	MAY	CONDITIONS TO AVOID
HAZARDOUS	X <--OCCUR	<--OCCUR	
POLYMERIZATION	N/A		

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
EXTINGUISH ALL SOURCES OF IGNITION. VENTILATE AREA AND CONTAIN SPILL. PICK UP AND PLACE IN LABELED CONTAINER. REUSE IF POSSIBLE.

WASTE DISPOSAL METHOD
DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL POLLUTION REGULATIONS.

NEUTRALIZING AGENT

LARGE AMOUNTS OF WATER WILL NEUTRALIZE.

SECTION IX - SPECIAL PROTECTION INFORMATION

REQUIRED VENTILATION
TYPICAL USE OF THIS PRODUCT DOES NOT REQUIRE SPECIAL VENTILATION. LOCAL EXHAUST IS SUFFICIENT.

RESPIRATORY PROTECTION
TYPICAL USE OF PRODUCT DOES NOT REQUIRE USE OF RESPIRATION. HOWEVER,
IN EMERGENCY SITUATIONS: 2,000PPM: SA/SCBA
10,000PPM: SAF/SCBAF
25,000PPM: SAF:PD,PP,CF
ESCAPE: SCBA

PROTECTIVE GLOVES
GLOVES SHOULD BE WORN DEPENDING UPON SEVERITY OF EXPOSURE.

EYE PROTECTION
GOGGLES SHOULD BE WORN DEPENDING UPON SEVERITY OF EXPOSURE.

VISION

(CONTINUED) SECTION IX - SPECIAL PROTECTION INFORMATIOPAGE : 05

OTHER PROTECTION
N/A

SECTION X - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE	INDOOR	HEATED	REFRIGERATED	OUTDOOR
100 F.<--MAX 0 F.<--MIN	X			

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING
KEEP AWAY FROM OPEN FLAME.
KEEP OUT OF EYES.
ALWAYS KEEP DRUM TIGHTLY CLOSED WHEN NOT BEING USED.

OTHER PRECAUTIONS
KEEP OUT OF REACH OF CHILDREN.
READ ENTIRE LABEL BEFORE USING.

SECTION XI - REGULATORY INFORMATION

CHEMICAL NAME	C.A.S. NUMBER	UPPER % LIMIT
METHANOL	67-56-1	40
ETHYLENE GLYCOL	107-21-1	5

THOSE INGREDIENTS LISTED ABOVE ARE SUBJECT TO THE REPORTING REQUIREMENTS OF 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372.
IF USE EXEMPTION APPEARS UNDER UPPER % LIMIT, END USERS ARE EXEMPT FROM NOTIFICATION BECAUSE THE PRODUCT IS USED AND LABELED FOR ROUTINE JANITORIAL WORK, OR THE PRODUCT IS USED AND LABELED FOR FACILITY GROUNDS MAINTENANCE (SUCH AS FERTILIZERS AND HERBICIDES), OR THE PRODUCT IS USED AND LABELED FOR MAINTAINING MOTOR VEHICLES.

SECTION XII - TRANSPORTATION - (FOR FUTURE USE)

APPLICABLE REGULATIONS
<--49 CFR <--IMCO <--TARIFF 6 D <--IATA <--MILITARY AIR (APR 71-4)

SHIPPING NAME

HAZARD CLASS	ID NUMBER	REPORT QTY

VISION

(CONTINUED) SECTION XII - TRANSPORTATION - (FOR FUTURE USE) PAGE : 06

LABELS	LIMITED QTY

UNIT CONTAINER

DOT SPS CONTAINER	NET EXPLOSIVE WT.

AEROSOL PROPELLANT(S)

SECTION XIII - REFERENCES

1. THRESHOLD LIMIT VALUE FOR CHEMICAL SUBSTANCES IN THE WORK ENVIRONMENT, 2ND EDITION, ACGIH, 1985.
2. DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, 6TH EDITION N. IRVING SAX.
3. VENDOR'S MSDS.

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The CHAIRMAN. Thank you, Mr. Bishop.

Mr. Showers.

STATEMENT OF DAVID SHOWERS, VICE CHAIRMAN, BUSINESS MANAGEMENT COMMITTEE, NATIONAL ASSOCIATION OF HOME BUILDERS

Mr. SHOWERS. Thank you, Senator. My name is David Showers. I am a builder from North Canton, OH, and I am vice chairman of the Business Management Committee of the National Association of Home Builders. I am appearing today on behalf of the more than 157,000 members, many of whom only recently became covered by the Hazard Communication Standard promulgated by the Occupational Safety and Health Administration.

During the next few minutes, I would like to make some general comments about NAHB's involvement with the HCS and its implementation in the construction industry.

First, let me repeat a statement that we have made numerous times in our past submissions on this issue. The construction industry is not opposed to hazard communication. We are in total agreement with OSHA that any worker who is exposed to hazardous chemicals is entitled to any information that he or she needs to avoid injury from these chemicals.

I will conduct whatever training is necessary to educate my employees as to the hazards which they are exposed to at work. Beyond that, however, it is apparent that different people have different opinions about what constitutes a hazardous chemical and what information workers really need to protect themselves.

NAHB's involvement with the Hazard Communication Standard goes back to 1985, when OSHA was ordered to explore the feasibility of applying the rule to nonmanufacturing industries. Working with a coalition of other construction industry associations, we have testified and filed comments with OSHA, the Office of Management and Budget, and a Subcommittee of the House Small Business Committee. We have also played a leading role in the litigation over the HCS which is currently pending before the U.S. Supreme Court.

Mr. Chairman, our industry is typified by relatively few fixed worksites, an extremely transient workforce, and, most importantly, relatively few chemical-related accidents and injuries. Given this situation, NHB has tried to play a constructive role in helping OSHA to tailor this rule to our jobsites.

Beginning with the MSDs, many of the regulatory costs of the HCS stem from the requirements that this document be maintained on all jobsites in our industry. We have opposed this requirement every step of the way, and with good reason.

MSDs contain little useful information for workers. Many of them do little more than tell us what the American Conference of Governmental Industrial Hygienists think about the hazards of a particular chemical. The information is written by people with PhDs in biochemistry and is only understandable by people with PhDs in that same industry. We have attached two copies of examples.

There is a certain irony to the entire MSD dispute. The irony stems from the fact that we have never asked OSHA to do away with MSDSs. If OSHA is so convinced as to the relevance of this information to the typical worker, we could learn to live with the requirement that employers make it available to employees on some reasonable basis. What we oppose is OSHA's requirement that an MSD sheet collection be maintained on every construction site in the country.

I am a scattered-site builder, and, at any one time, my company may be operating on dozens if not hundreds of different sites in the Canton-Cleveland corridor. My MSDS sheet collection fills a 2-inch binder, the product of months of collection work and thousands of dollars of expenses, not including the duplication costs. The HCS, as currently written, requires me to have a copy of this binder on each of my sites. The problem is, where do I leave them?

My sites have no field offices or construction trailers. Trucks come and go all the time, and a literal reading of the rule would require me to construct MSD buildings on each of my jobs. We plead with OSHA to address our concerns on this matter, as OMB did. Let us keep the MSD sheets back at the office. We will teach our workers how to read the MSDSs and make them available any time. However, given the complexity of the information and the marginal relevance to the actual health protection, we should not have to do any more.

Our second main concern is with the so-called consumer products exemption. The problem is grounded in OSHA's definition of a hazardous chemical. The current definition is extremely broad. The so-called one-study rule has resulted in an estimated universe of 575,000 covered chemicals.

We have repeatedly proposed that OSHA create a meaningful exemption for consumer products. We believe that our Hazard Communication Program should focus on the truly hazardous chemicals and that this information not be dilluted with lectures about the risks of drinking turpentine.

Mr. Chairman, the gentleman from OSHA earlier today raised a couple of questions that I would like to make comment to, or address my comments to. One of the comments was the consumer products, use of the consumer products, or the interpretation of consumer products. We need a clearly defined definition for my company and other companies like mine, small businesses, to be able to teach our workers the hazardous chemicals that they are being exposed to; we need to understand what those hazardous chemicals are. Without some clearly defined definition of whether we are supposed to teach them about a particular chemical or not, we do not know whether to do it or not to do it.

We have heard testimony all morning from other business people that have the same exact problem. This issue needs to be dealt with. The issue of the multisite needs to be dealt with. For my company to duplicate this book, perhaps 100 times, and erect some form of a building or a place where we can lock these books up so that they are not vandalized and are weather-resistant, the cost is just going to be horrendous. And we are not convinced that there is really any benefit to doing that.

If we could keep these back at the office, have a training program, teach the workers about the various chemicals and how to read the sheet, then, I believe, and I think our industry believes, that this would allow a tremendous paperwork reduction and lower our cost. I thank you.

[The prepared statement of Mr. Showers follows:]

Statement of the

National Association of Home Builders

Before the

UNITED STATES SENATE

COMMITTEE ON SMALL BUSINESS

Statement of:

DAVID SHOWERS

on the

OSHA HAZARD COMMUNICATION STANDARD

JUNE 22, 1989

The National Association of Home Builders

THE NATIONAL ASSOCIATION OF HOME BUILDERS (NAHB) represents more than 155,000 member firms located in every state of the U.S., the District of Columbia and Puerto Rico. The cohesiveness of the organization is maintained through a network of 760 local and 44 state affiliated associations. NAHB members can be found in every type of community across the nation, representing rural and urban interests.

While the association was founded to represent the small home builder, it has expanded through the years to include the diversified builder.

HOUSING AND THE ECONOMY. Housing is one of the key indicators of the economy. Residential construction stimulates the economy directly by generating jobs, wages and tax revenues and indirectly as the demand for goods and services created by the construction of new homes "ripples" through the economy. Although it's difficult to gauge the indirect impact, the direct impact of residential construction on the economy is profound.

From 1984 to 1988, the nation's home builders constructed 8.4 million new houses and apartment units, creating 3.0 million full-time jobs and generating $65 billion in wages each year. Local, state and federal tax revenues generated by the new construction totaled $113 billion over the five-year period. In addition, property taxes generated another $12 billion for local governments each year.

The construction of 1,000 single-family homes generates 1,800 worker-years of employment in construction and construction-related industries; $39 million in wages; $16 million in combined federal, state and local tax revenues; $1.6 million in local property taxes during the first year and $19 million in local property taxes over 20 years assuming a five percent annual increase in property values.

Good morning. My name is David Showers. I am a builder from North Canton, Ohio, and the Vice Chairman of the Business Management Committee of the National Association of Home Builders (NAHB). I am appearing today on behalf of the more than 157,000 members, many of whom only recently became covered by the Hazard Communication Standard promulgated by the Occupational Safety and Health Administration (OSHA).

During the Next few minutes, I would like to make some general comments about NAHB's involvement with the HCS, and its implementation in the construction industry, I will also make a few suggestions about how this important rule could be modified to make it workable in our industry.

First, let me repeat a statement that we have made numerous times in our past submissions on this issue: The construction industry is not opposed to hazard communication. We are in total agreement with OSHA that any worker who is exposed to hazardous chemicals is entitled to any information that he or she needs to avoid injury from these chemicals. I will conduct whatever training is necessary to educate my employees as to the hazards which they are exposed to at work. Beyond that, however, it is apparent that different people have different opinions about what constitutes a "hazardous chemical" and what information workers really need to protect themselves.

NAHB's view of this matter has been well-documented. Certainly, we have no problems with labeling requirements for muriatic acid, methyl ethyl ketone, and other hazardous substances that are commonly used in construction. However, we cannot understand why the HCS requires small builders to maintain a Material Safety Data Sheet (MSDS) on each jobsite where Tidy Bowl or Clorox may be in use.

By way of background, the history of the Hazard Communication Standard (HCS) is long and torturous. This bureaucratic melodrama dates back to the passage of the OSHA Act in 1970. Over the past two decades, the players have included a half dozen federal agencies, a host of advisory committees and consultants, the courts, the Congress, several labor unions, and various public interest groups, as well as the regulated community.

NAHB's involvement with the Hazard Communication Standard goes back to 1985, when OSHA was ordered to explore the feasibility of applying the rule to nonmanufacturing industries. Working with a coalition of other construction industry associations, we have testified and filed comments with OSHA, the Office of Management and Budget (OMB), and a subcommittee of the House Small Business Committee. We have also played a leading role in the litigation over the HCS, which is currently pending before the U.S. Supreme Court.

We have taken these actions because we feel quite strongly that the rule that was imposed on the construction industry earlier this year was written for the manufacturing sector, and failed to account accurately for the simple fact that a construction site is not a factory. Our industry is typified by several fixed worksites, an extremely transient workforce, and, most importantly, relatively few chemical-related accidents and injuries. Given this situation, NAHB has tried to play a constructive role in helping OSHA to tailor this rule to our jobsites. It is unfortunate that OSHA chose to ignore our good faith proposals which would make the Hazard Communication Standard workable in the construction industry.

NAHB's position in this matter is that OSHA should adopt the proposals made nearly two years ago by OMB during its Paperwork Reduction Action review of the HCS. From our perspective, this means making two relatively small changes in the HCS. First, MSD sheets should not be required on multiemployer worksites. Second, common consumer products should be exempted from coverage under the rule. I would like to explore each of these concepts in a bit more detail.

Beginning with MSD sheets, many of the regulatory costs of the HCS stem from the requirement that those documents be maintained on all jobsites in our industry. We have opposed this requirement every step of the way, and with good reason. MSDs

contain little useful information for workers. Many of them do little more than tell us what the American Conference of Governmental Industrial Hygienists thinks about the hazards of a particular chemical. The information is written by people with Ph.D's in biochemistry, and it is understandable only by people with Ph.D's in biochemistry.

I recently reviewed an MSD (copy attached) sheet for a chemical that is used in my office in Ohio, and I would like to share its contents with you. This chemical is described as "60 to 65 percent styrene acrylate copolymer, 20 to 25 percent acrylic resin, 10 to 15 percent carbon black, less than 5 percent polyolefin, and less than 1 percent amorphous silica." The MSD sheet describes the results of oral and inhalation toxicity tests of this chemical on rats; dermal toxicity and irritation tests on rabbits; skin sensitization tests on guinea pigs; and some kind of aquatic tests on fathead minnows. The chemical in question was photocopier toner made by Xerox.

We received another MSD (copy attached) which was so hard to understand that it took several people several minutes to figure out that the chemical being described was plumber's glue.

There is a certain irony to the entire MSD dispute. This irony stems from the fact that we have <u>never</u> asked OSHA to do a way with MSDs. If OSHA is so convinced as to the relevance of

this information to a typical worker, we could learn to live with a requirement that employers make it available to employees on some reasonable basis. What we oppose is OSHA's requirement that an MSD sheet collection be maintained on every construction site in the country. I am a scattered site builder, and at any one time, my company may be operating on dozens if not hundreds of different sites in the Canton-Cleveland corridor. My MSDS collection fills a two-inch binder, the product of months of collection work and thousands of dollars in expenses, not including duplication costs. The HCS, as currently written, requires me to have a copy of this binder on each of my sites. The problem is where do I leave them. My sites have no field offices or construction trailers. Trucks come and go all the time, and a literal reading of the rule would require me to construct "MSD buildings" on each of my jobs. We plead with OSHA to address our concerns on this matter as OMB did. Let us keep the MSD's back at the office. We'll teach our workers how to read MSD's, and make them available anytime. However, given the complexity of this information and the marginal relevance to actual health protection, we should not have to do any more.

Our second main concern is with the so-called "consumer products" exemption. This problem is grounded in OSHA's definition of a hazardous chemical. The current definition is extremely broad. The so-called "one-study" rule has resulted in an estimated universe of 575,000 covered chemicals. We have

repeatedly proposed that OSHA create a meaningful exemption for "consumer products." I stress the word "meaningful" to distinguish our proposal from the "consumer products" exemption in the current rule, which is relatively meaningless. As our written comments to OSHA make clear, adoption of the definition contained in the Superfund Amendments and Reauthorization Act of 1986 (SARA), and increased reliance upon existing labels required by the Consumer Product Safety Act will ensure that our hazard communication programs focus upon the truly hazardous chemicals, and that this information not be diluted with lectures about the risks of drinking turpentine.

Let me conclude with a word about the current state of enforcement in the field. I have been fortunate enough not to have been the subject of an OSHA inspection since the rule went into effect, but the collective experiences of NAHB members are certainly not encouraging. It is clear that many of the OSHA field officials who are charged with enforcing this rule know very little about it. We have heard stories about OSHA field personnel showing up at HazComm seminars armed with little more than a "cheat sheet" on the HCS's high points. These officials prove woefully incapable of answering any of the practical questions posed by our members. One OSHA official told a subcontractors' group that he could not figure the rule out, so his approach would be to write lots of citations and let the courts figure out what the rule really meant.

The apparent level of knowledge of the OSHA inspection force [redacted] in this area is also somewhat troubling. For example, even though the HCS contains an exemption for items intended for personal use, we are still hearing stories of inspectors who threaten citations over such things as hand lotion and decaffeinated coffee.

In conclusion, NAHB calls upon OSHA to regain the initiative in this matter and make the changes in the HCS that are necessary for it to work in our industry. I thank the Committee for its time, and will be glad to take any questions concerning my testimony.

XEROX

Material Safety Data Sheet

Date: Aug. 11, 1982
Revision: Sept. 9, 1985

Manufacturer: Xerox Corporation
Rochester, New York 14644

Emergency Tel. No. : (716) 422-2177
Information Tel. No.: (800) 828-6571

Section I - Product Identification

Trade Names/Synonyms: 1020/1035/2830 Toner
COPIER TONER

Part No. : 6R85, 6R94, 6R102, 6R118, 6R283

Chemical Name: None

Ingredients	CAS No.
Styrene, Acrylate Copolymer (60-65%)	25213-39-2
Acrylic Resin (20-25%)	
Carbon Black (10-15%)	7440-44-0
Polyolefin (<5%)	
Amorphous Silica (<1%)	7631-86-9

Section II - Emergency and First Aid

Eyes: Flush with water.
Skin: Wash with soap and water.
Inhalation: Remove from exposure.
Ingestion: Dilute stomach contents with several glasses of water.
Primary Route of Entry: Inhalation
Symptoms of Overexposure: Minimal respiratory tract irritation may occur as with exposure to large amounts of any non-toxic dust.

Additional Information: See Sections V and VII.
Further information on file in Poisindex.

Section III - Toxicology and Health Information

This material has been extensively tested and evaluated by Xerox Corporation. When used as intended, it does not represent any known health or safety hazard.

Oral LD_{50}: >5 g/kg (Rats) practically non-toxic.
Dermal LD_{50}: >2 g/kg (Rabbits) practically non-toxic.
Inhalation LC_{50}: >6.6 mg/l (Rats) practically non-toxic.*
Eye Irritation: (Rabbits) non-irritating
Skin Sensitization: (Guinea Pigs) non-sensitizing
Skin Irritation: (Rabbits) non-irritating
Human Patch: Non-irritating, non-sensitizing
Mutagenicity: No mutagenicity detected in Ames. WP_2, Pol A+/A-, and Micronucleus Assays.
Aquatic LC_{50}: >500 mg/l (Fathead Minnows) non-toxic

TLV: 10 mg/m³ (Total Dust)
5 mg/m³ (Respirable Dust)

PEL: 15 mg/m³ (Total Dust)
5mg/m³ (Respirable Dust)

†XEL: 5 mg/m³ (Total Dust)

Additional Information: *Not tested to the highest dose or concentration.

†XEL - Xerox Exposure Limit

N.A. - Not Applicable

Form 58739 (1984) 17AA

Trade Name 1020/1035/2830 Toner | MSDS No 0020

Section IV - Physical Data

Appearance/Odor: Black powder / faint odor
Boiling Point: N.A.
Solubility in Water: Negligible
Evaporation Rate: N.A.
Vapor Density (Air = 1): N.A.
Volatile N.A. **% (Wgt.)** N.A. **% (Vol.)**

Softening Range: 85°C to 100°C
Melting Point: N.A.
Specific Gravity (H_2O = 1): 1
Vapor Pressure (mm Hg): N.A.
pH = N.A.

Section V - Fire and Explosion Data

Flash Point (Method Used): N.A.

Flammable Limits **LEL:** N.A. **UEL:** N.A.

Extinguishing Media: Water, Foam, Dry chemical

Special Fire Fighting Procedures: Avoid inhalation of smoke.

Fire and Explosion Hazards: Toner is a combustible powder. When dispersed in air, it forms explosive mixtures.

Section VI - Reactivity Data

Stability:			**Hazardous Polymerization:**		
	Unstable			**May Occur**	
	Stable	X		**Will Not Occur**	X

Hazardous Decomposition Products: Products of combustion are toxic. Avoid breathing smoke.

Incompatability (Materials to Avoid): None

Section VII - Special Protection Information

Respiratory Protection: None required when used as intended in Xerox equipment.
Eye Protection: None required when used as intended in Xerox equipment.
Protective Gloves: None required when used as intended in Xerox equipment.
Other: For use other than normal customer - operating procedures (such as in bulk toner processing facilities), goggles and respirators may be required. For more information, contact Xerox.

Section VIII - Special Precautions

Handling and Storage: None

Conditions to Avoid: None

Section IX - Spill, Leak, and Disposal Procedures

For Spills or Leakage: Loose toner can be removed using a vacuum cleaner. Residue can be removed with soap and cold water. After removal of loose toner, garments may be washed or dry cleaned.

Waste Disposal Method: Do not incinerate. No special techniques beyond normal practice. Insure conformity with federal, state or local regulations.

Section X - Transportation Information

DOT Proper Shipping Name: Not Regulated
Hazard Classification: N. A.
ID Number: N. A.

WELD-ON

MATERIAL SAFETY DATA SHEET

Adapted and modified from USDL Form OSHA-20

Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. Use or dissemination of all or any part of this information for any other purpose may result in a violation of law or constitute grounds for legal action.

SECTION I

MANUFACTURER'S NAME: INDUSTRIAL POLYCHEMICAL SERVICE

EMERGENCY TELEPHONE NO.: (213) 321-6518

ADDRESS: 17109 SOUTH MAIN STREET, P.O. BOX 379, GARDENA, CA. 90248

CHEMICAL NAME AND FAMILY: CPVC SOLVENT CEMENT
MIXTURE OF CPVC RESIN AND ORGANIC SOLVENTS

TRADE NAME: FUSE-ON 807 FOR CPVC PLASTIC PIPE

FORMULA: N/A

SECTION II - HAZARDOUS INGREDIENTS

		APPROX. %	ACGIH TLV (PPM)
No Ingredients are listed carcinogens.			
CHLORINATED POLYVINYL CHLORIDE RESIN W/SOME FILLERS & PIGMENTS	CAS 68648-82-6		N/A
TETRAHYDROFURAN (THF)	CAS 109-99-9	MAJOR	200 PPM
METHYL ETHYL KETONE (MEK)	CAS 78-93-3	MINOR	200 PPM
CYCLOHEXANONE	CAS 108-94-1	MINOR	25 PPM (SKIN)

SHIPPING INFORMATION:
DOT HAZARD CLASS: Flammable Liquid
DOT SHIPPING NAME: Cement Flammable Liquid
UN/NA 1133

SECTION III - PHYSICAL DATA

APPEARANCE: Tan, medium syrupy liquid	ODOR: Ethereal
BOILING POINT (°F/°C): 151°F Based on first boiling component: THF	SPECIFIC GRAVITY @ 77°F: 0.930 ± 0.002
VAPOR PRESSURE (mm Hg): 143 mm Hg. Based on first boiling component THF @20°C	PERCENT VOLATILE BY VOLUME (%): Approx: 85-90%
VAPOR DENSITY (AIR = 1): 2.49	EVAPORATION RATE (BUAC = 1): Initially 4
SOLUBILITY IN WATER: Solvent portion completely soluble in water. CPVC resin portion separates out.	

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	FLAMMABLE LIMITS (PERCENT BY VOLUME)	LEL	UEL
T.O.C. 6-8°F		1.8	11.8

FIRE EXTINGUISHING MEDIA:
Dry chemical, carbon dioxide, foam, Ansul "Purple K", water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Evacuate enclosed areas. Stay upwind. Close or confined quarters require self-contained breathing apparatus; positive pressure hose masks or airline masks. Use water spray to cool containers, to flush spills from source of ignition and to disperse vapors.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Fire hazard because of low flash point and high volatility. Vapors are heavier than air and may travel to source of ignition.

PRIMARY ROUTE(S) OF EXPOSURE: X INHALATION X SKIN CONTACT __ INGESTION __ EYE CONTACT

EFFECT OF OVEREXPOSURE INHALATION: Major route of potential exposure. Severe overexposure may result in nausea, dizziness, headache. Can cause narcosis, irritation of eyes and nasal passages. May irritate skin. Normal defatting effect of solvents on tissue. EYES: Liquid may cause temporary irritation, painful burning of eyes and lids, watering of eyes and inflammation of conjuctiva. INGESTION: No effects of exposure expected.

EMERGENCY AND FIRST AID PROCEDURES

INHALATION: If overcome by vapors, remove to fresh air and if breathing stopped, give artificial respiration - preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

EYE AND SKIN CONTACT: Remove contaminated clothing and shoes. Wash skin with plenty of water for at least 15 minutes. Flush eyes with plenty of water for 15 minutes and call a physician.

INGESTION: If swallowed, do not induce vomiting. Call physician immediately.

SECTION VI - REACTIVITY DATA

STABILITY			CONDITIONS TO AVOID
	UNSTABLE		Keep away from heat, sparks, open flame and other sources of ignition. This liquid is very stable at normal ambient temperatures.
	STABLE	X	

INCOMPATABILITY (Materials to avoid)
Caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocynates.

HAZARDOUS DECOMPOSITION PRODUCTS When forced to burn, CPVC gives out carbon monoxide, carbon dioxide, hydrogen chloride and smoke.

HAZARDOUS POLYMERIZATION			CONDITIONS TO AVOID
	MAY OCCUR		Keep away from heat, sparks, open flame and other sources of ignition.
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Eliminate all ignition sources. Avoid breathing of vapors. Keep liquid out of eyes. Flush with large volume of water. Contain liquid with sand or earth. Absorb with sand on nonflammable absorbent material and transfer into steel drums for recovery or disposal. Prevent liquid from entering drains.

WASTE DISPOSAL METHOD Follow local, state and Federal regulations. Consult disposal expert. Can be disposed of by incineration. Excessive quantities should not be permitted to enter drains. WASTE CODE: 412

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type) None required with adequate ventilation. Use NIOSH approved respirator for organic vapors for confined areas, e.g., Mine Safety Appliance Cat. # 460968 and chemical cartridge #464031.

VENTILATION
Provide adequate ventilation. Vapor concentration must be kept well below TLV.

PROTECTIVE GLOVES Rubber or PVA

EYE PROTECTION Chemical goggles

OTHER PROTECTIVE EQUIPMENT Impervious apron (if needed)

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Store in the shade between 40°F and 110°F. Keep away from heat, sparks, open flame and other sources of ignition. Avoid prolonged breathing of vapor. Use with adequate ventilation.

OTHER PRECAUTIONS Follow all precautionary information given on the container label, product bulletin, and our solvent cementing literature. All handling equipment should be electrically grounded.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.

JUNE '86

The CHAIRMAN. Thank you, Mr. Showers. Gentlemen, let me just conclude the hearing by saying that, No. 1, I think your suggestion, Mr. Showers, is sound. Carrying all this technical paperwork to the jobsite is an absurdity on its face.

No. 2, I did not realize until today that OSHA regulations overlap those at FDA. Dr. Young, the FDA Commissioner, and I have become good friends through the hearings before the Agriculture Subcommittee.

And I have become something of a fan of Food and Drug Administration; I think they do an excellent job of protecting the consuming public on food and drugs. And why we are including drugs in this bill, when FDA has been doing a superb job of regulating them for years, makes nc sense. They ought to be exempt. Heaven knows who else ought to be exempt.

And I was just wondering, Mr. Bishop, on that list you have there, is that just from one supplier, those 1,200 MSDSs?

Mr. BISHOP. What it is from is a group of suppliers in the plumbing industry in New Jersey, 8 or 10 of them, maybe a dozen, got together and I think they decided that they would do it all together. But it is certainly not all of my suppliers, by a long ways.

The CHAIRMAN. In your business, would you computerize that stuff? Would you put it in a computer?

Mr. BISHOP. No, I would not.

The CHAIRMAN. You would not. Would you, Mr. Godwin?

Mr. GODWIN. No.

The CHAIRMAN. Would you, Mr. Loving.

Mr. LOVING. No, sir.

The CHAIRMAN. Maybe we will not be successful, but I can promise you the Members of this Committee will be trying to revise this standard. I am not sure the agency is willing to fix it. It seems to me that we might just have to go back to the drawing board.

Members of Congress are always very reluctant to vote against something called Hazard Communication. We do want to protect workers in the workplace. But I never will forget when OSHA first came into existence. We were going to provide safe working places for all the workers in America.

And I remember the book that OSHA put out on farming. It cautioned that manure is very slippery and if you stepped in it, you might fall. Some people have seriously injured themselves that way. Another section was on ladders. You know, ladders can be very hazardous, too. Be sure the ladder is sturdy before you attempt to climb it. OSHA warned us about just such things as that. And this is almost as bad.

This has really been an enlightening morning for me. The hearing has been extremely edifying and you have all presented yourselves extremely well and particularly as the regulations affect your individual companies. I am not sure exactly how we are going to approach this, but I promise you, an effort is going to be made to redress what is obviously something that is terribly burdensome economically and makes no sense. Thank you all for coming.

[The Committee was adjourned at 12:15 p.m.]

APPENDIX

N · A · W

National Association of Wholesaler-Distributors

Statement of:

ERNEST ISENBERG, PRESIDENT
WESTERN EXTRALITE COMPANY
KANSAS CITY, MISSOURI

Before the:

COMMITTEE ON SMALL BUSINESS
UNITED STATES SENATE

On:

EMPLOYEE HEALTH RISK
NOTIFICATION: THE OSHA
HAZARD COMMUNICATION STANDARD

June 22, 1989

1725 K Street, N.W. • Suite 710 • Washington, D.C. 20006 • 202/872-0885 • FAX: 202/785-0586

SUMMARY

The National Association of Wholesaler-Distributors (NAW) fully subscribes to the purpose of the Hazard Communication Standard; i.e., to increase the availability of hazard information to employers and employees, prevent employee exposure to hazardous chemicals in the workplace and, as a result, reduce the incidence of chemically-related occupational diseases and injuries in American workers. Further, we believe that a uniform federal standard is essential to ensure that those who make, sell and use chemical products are not faced with the crippling cost and administrative burden of having to comply with a plethora of different sets of complex rules.

The HCS is itself a very complicated rule and employers are struggling with the confusing and expensive task of meeting the obligations assigned them by the standard. For the wholesaler-distributor supplying products to downstream users, the HCS is a costly and confusing blizzard of paperwork that exceeds the administrative capabilities of many companies even under the best of circumstances. Western Extralite's experience suggests that an approach to downstreaming hazard information that requires critical information now contained in material safety data sheets be affixed to or accompany each product unit would ease the compliance burdens felt throughout the chain of distribution and do a substantially more effective job of protecting workers.

The original HCS applied to workplaces in wholesale distribution where the potential for exposure to harmful chemicals is greatest, and we are unaware of any compelling evidence that suggests that workers employed in wholesale trade generally are at risk of experiencing harmful chemical exposures in the workplace. Where the possibility of worker exposure to hazardous chemicals exists, we believe employers have a duty to train their employees as the HCS requires. However, the in-house capability of many employers to develop and implement adequate workplace hazard communication programs is limited. We thus believe that workers would benefit were the HCS to expressly authorize and OSHA approve multi-employer training programs.

STATEMENT OF
ERNEST ISENBERG, PRESIDENT
WESTERN EXTRALITE COMPANY
KANSAS CITY, MISSOURI

ON BEHALF OF THE
NATIONAL ASSOCIATION OF WHOLESALER-DISTRIBUTORS

BEFORE THE
COMMITTEE ON SMALL BUSINESS
UNITED STATES SENATE

EMPLOYEE HEALTH RISK NOTIFICATION: THE OSHA HAZARD COMMUNICATION STANDARD

June 22, 1989

I. INTRODUCTION

Chairman Bumpers and Members of the Committee:

Good morning and thank you for the opportunity to present my views regarding the problems faced by businesses in complying with the Hazard Communication Standard (HCS).

A. WESTERN EXTRALITE CO.

I am Ernest Isenberg, President of Western Extralite Co., Kansas City, Missouri. Western Extralite is a 51 year old electrical distribution company that provides electrical products for facility maintenance and to the construction industry. Our company employs approximately 90 people at eight locations in Western Missouri and Eastern Kansas.

B. NATIONAL ASSOCATION OF ELECTRICAL DISTRIBUTORS

Among its other affiliations, Western Extralite is a member of the National Association of Electrical Distributors (NAED). From 1981-1983, I was privileged to serve on the NAED Board of Directors.

Founded in 1908, NAED is a national, non-profit trade association comprised of 3,475 member outlets located in all 50 states, the Virgin Islands, Puerto Rico and Guam. The electrical distribution industry generates approximately $40 billion in annual sales, and our median gross margin after taxes is slightly in excess of 1.60 percent.

II. THE NATIONAL ASSOCIATION OF WHOLESALER-DISTRIBUTORS AND THE WHOLESALE DISTRIBUTION INDUSTRY

Both Western Extralite and NAED are members of the National Association of Wholesaler-Distributors (NAW), and it is on NAW's behalf that I appear today.

NAW is a federation of 116 national wholesale distribution trade associations (a list is attached as Appendix A), 54 state and regional trade associations, and some 2,000 individual wholesale distribution firms. All told, NAW represents approximately 40,000 wholesale distribution companies with 150,000 places of business nationwide.

NAW's membership, which is dominated by smaller businesses, is responsible for over 60 percent of the $1.4 trillion of merchandise which flows through wholesale channels annually. NAW members also employ a comparable percentage, or 3 million, of the over 5 million Americans who work in wholesale trade. Thus, while many of the individual firms represented by NAW are small individually, their collective economic importance is extremely significant.

III. A UNIFORM APPROACH TO WORKPLACE HAZARD COMMUNICATION IS DESIREABLE

Let me assure you and all members of the committee, Mr. Chairman, that NAW fully subscribes to the purpose of the HCS and recognizes the need for a uniform federal standard. The preventative approach to workplace hazard communication serves the unmistakable interest of workers, employers and society in general, because it seeks to combat occupational disease at its source.

I would point out that the cost of compliance with the HCS is a particularly important concern of wholesaler-distributors, and we agree with the logic of OSHA's contention that "a uniform, Federal standard will reduce the cost of compliance with the increasing number of state and local right -to-know laws." (48 Fed. Reg. 53327, 1983.)

According to a survey conducted by NAW last year which profiles some 2,000 wholesale distribution firms across the United States, 24 percent employ people in multiple states, 72 percent sell their products in interstate commerce, and 72 percent generate an annual sales volume of $10 million or less. Nearly 90 percent have annual sales volumes of $25 million or less. So clearly, the cost benefits of uniformity will be widely felt in my industry.

IV. WHOLESALER-DISTRIBUTOR COMPLIANCE OBLIGATIONS UNDER THE HCS

A. SUPPLIER OBLIGATIONS

Wholesaler-distributors that sell hazardous chemical products have been required to ship labeled containers and provide material safety data sheets (MSDSs) to their manufacturer and distributor customers since the original HCS went into effect in November 1985. According to the preamble to the original Final Rule, "This may be accomplished by providing an MSDS prepared by the producer of the chemical." (48 Fed. Reg. 53337, 1983.) The August 24, 1987 revised Final Rule requires wholesaler-distributors to provide MSDSs to every commercial customer of covered products -- virtually the entire customer base of the industry. This may sound simple enough, Mr. Chairman, but believe me, it is not. Let me explain how complicated this has been and remains for Western Extralite.

First, however, I would point out that Western Extralite is atypical of distributors generally in the basic manner in which we have approached the HCS. Even before the HCS went into effect we realized the extensive paperwork burden it would impose. Consequently, we removed from our shelf all items we knew to be chemically hazardous that were not absolutely essential to serve our customer base, and we retained only 17 HCS-covered products.

In addition, when we are are approached to buy a new product, our first question is, "Is this a hazardous chemical?" If it is, we analyze it on the basis of value vs. its inherent paperwork problem. Now, this certainly is not ideal from a commercial point of view, but it is the only feasible method we can employ under the current HCS.

20-455 - 89 - 12

After considering various methods of complying with our obligation to downstream MSDSs, we decided to make a mass mailing to all of Western Extralite's 1,500 accounts. The mailing included MSDSs on our 17 HCS-covered items. The MSDSs varied in length, and we conservatively estimate that the entire project included over 120,000 pieces of paper.

We have since conducted two additional mailings of similar content, and we follow the same procedure for transmitting MSDS updates and MSDSs on new product lines that are covered by the HCS. Beyond that, we place signs at our sales counters in order to make walk-in, over-the-counter purchasers aware of those products that require MSDSs and of the availability of an MSDS upon request

The paperwork blizzard created by this process is mind boggling. Are we covering all the bases? We cannot be absolutely certain because there are simply too many cracks through which an MSDS may slip. It is not uncommon for a manufacturer to fail to provide an MSDS. An MSDS may get lost in the mail. No matter how hard we try to avoid them, clerical errors do happen. The possibilities are endless. One thing is certain, however: If the hazard information fails to make it through the chain of distribution, the distributor and the worker using the product are at risk, the former to penalties and tort liability, the latter to harmful exposure and injury.

The supposed solution; requiring wholesaler-distributors to obtain from their supplier an MSDS for any covered product for which none is furnished, poses a substantial cost and compliance burden for my company and the industry in general. The NAW survey provides us with some evidence as to the magnitude of the problem. Seventy four percent of the respondents indicated that they sell, on average, 321 products that contain hazardous chemicals. However, fewer than half could state that they had an MSDS for every hazardous chemical in their workplace. Beyond that, only 30 percent were receiving necessary MSDSs from their suppliers as the HCS intends, and fully 20 percent were not routinely receiving MSDSs from their suppliers at all.

I would add, Mr. Chairman, that there is no way for us to know if the chemical manufacturer has updated the MSDS on a product we sell if the chain of MSDS transmittal is somehow broken between the chemical manufacturer and us. As a result, my ability to obtain an updated MSDS where none is furnished is non-existent. And on those occasions when revised MSDSs are received by mail (which is common), the product on our shelf to which the update applies (if any) is not always readily apparent.

Unfortunately, the paperwork and compliance saga does not end here. Sixty two percent of the respondents to the NAW survey indicated that they purchase essentially identical products from multiple suppliers, each of which must furnish an appropriate MSDS. Due to the risks associated with replacing multiple (and frequently differing) MSDSs with a single, self-generated generic MSDS, only 10 percent are willing to do so. The remaining 90 percent attempt to juggle multiple MSDSs for these products.

The process by which hazard information is sent through the chain of distribution to employers is significantly complicated by the transmittal of irrelevant MSDSs. Let me give you just one example.

We have received numerous MSDSs on articles, products that are expressly exempt from the standard's coverage. We do not employ chemical engineers to analyze information contained in MSDSs and I know of no electrical distributor that does. So if we receive an MSDS on an item we believe to be an article, we question the manufacturer, a series of time consuming exchanges that are absolutely necessary given the volume of MSDSs we receive on these exempt products. This, in and of itself, is a real problem for a small company like Western Extralite.

I guess that manufacturers are issuing MSDSs on these items to protect themselves from possible legal and regulatory problems. But this manner of implementing the standard, unintended by OSHA, unnecessarily compounds the paperwork hardship for the wholesaler-distributor.

Let's look at all this from another perspective; that of the employer who purchases HCS covered products for use in the workplace. That customer likely purchases those products from several distributors, each of which are literally inundating the customer with paper. I honestly question the usefulness of the hazard information being transmitted in this environment and believe strongly that worker safety is being buried under all this paper.

B. EMPLOYER OBLIGATIONS

The original HCS required only manufacturers to comply with the standard as employers. Thus, wholesaler-distributors who conduct product processing or "miscellaneous" manufacturing operations such as machining, blending or mixing, have been required since May 1986 to have a written hazard communication program descriptive of how the employer is meeting the requirements of the HCS; label each container of hazardous chemicals in the workplace; maintain, file and make available to employees an MSDS for each hazardous chemical in the workplace; and train employees on the hazards of the chemicals to which they may be exposed.

The August 24, 1987 revised Final Rule extended these obligations to all wholesaler-distributors who have facilities where covered products are present in any quantity, in nearly any form, and for any reason. For all practical purposes, these obligations went into effect for industry firms on June 24, 1988.

Let us first take a look at this from the most important vantage point of all; that of the worker. Is the HCS' worker protection objective enhanced or hindered by a hazard communication system that requires suppliers to provide and employers to file and maintain somewhere in the workplace an extensive series of complicated and frequently lengthy MSDSs? Asked another way, are we getting the degree of worker safety we should out of the present federally- mandated hazard communication system?

In my view, the answer is "no." Let me give scenarios of a couple of typical occurrences in the electrical industry that lead me to this conclusion.

An electrical worker has been dispatched by his employer to do repairs in a private residence. He has an accident when using a hazardous substance. The worker reads the label on the product but feels he needs more information. The worker did not bring the product's MSDS to the job with him, so what should he do? Does he call his employer so someone can look for the MSDS in a manual or file? And if so, what happens if the MSDS is missing for some reason?

Another rather frequent scenario: An electrical worker in a 40 story office building has an accident when using a hazardous chemical. He calls the office where the MSDS file is maintained several floors below to obtain the information he needs. The call is answered by someone who knows nothing about the MSDS file who then goes in search of someone who does. Even when the appropriate MSDS is located, what is the worker to do when there is this lengthy delay in getting the necessary information and what are the consequences?

Take the same scenarios. If important information contained in the MSDS were affixed to or accompanied the product unit itself, the worker would have immediate access to the data he needs to protect himself and others, and deal with the emergency in a safe and effective manner.

Yes, Mr. Chairman, the current HCS generates a lot of data and a lot of paper, but all too frequently it fails to deliver safety to the worker.

Additionally, the basic challenge of complying with one's obligations under the HCS as an employer presents a high hurdle to many companies in wholesale distribution. As you know, this is the single most extensive regulation ever promulgated by OSHA both in terms of the substances to which it applies and the number of workplaces it covers. Not surprisingly, the standard has generated a great deal of confusion in wholesale distribution and, I suspect, other industries, and employers are uncertain as to how the HCS applies, when it applies, to what products it applies and under what circumstances. The manner of implementation by a substantial segment of the "upstream" supplier community has added to the confusion, as has the rather tortured way in which the regulatory process has gone forward in this matter. According to the survey of wholesale distribution companies I previously referenced, nearly half did not know if they are required to conduct a workplace hazard communication and training program under the expanded HCS.

Perhaps some of the confusion would have been avoided had the expansion of the scope of the HCS been preceded by an orderly, ordinary notice-and-comment rulemaking process. Unfortunately, this was not the case. And I have to say, Mr. Chairman, that some of the confusion in this area would probably have been avoided if OSHA had been prepared with a compliance assistance program to go with the expansion of the HCS in August 1987. The Office of Management and Budget (OMB) subsequently directed OSHA to develop such a plan by January 1, 1988. Unfortunately, OSHA missed that deadline by several months. It was not until August 8, 1988, when OSHA promulgated a still-pending proposed rule to modify the HCS that the agency first made non-mandatory compliance guidance available.

Because the in-house capabilities of many employers to develop and implement adequate workplace hazard communication programs is limited, many require some level of outside assistance. NAW itself has developed a compliance assistance program that is in wide use in our industry today. However, the NAW program is generic, and I believe that many wholesaler-distributors feel the need to hire a qualified occupational safety and health specialist or right-to-know consultant to help them answer basic, fundamental questions as well as accomplish the more complicated task of developing and implementing employee training programs.

One way to help employers conduct technically sound employee education programs at an affordable cost would be to have the HCS expressly authorize private, OSHA-approved multi-employer training programs. This would enable employers to combine resources to obtain the outside technical expertise that is simply out of the economic reach of many businesses on an in-house basis.

V. A BETTER WAY

Mr. Chairman, as my testimony suggests, I fear that the nation's present hazard communication program is crippling businesses on the one hand and failing to do an adequate job of delivering safer, more healthful workplaces on the other. A better way must be found to protect working Americans who may be exposed to hazard substances on the job.

I would like to propose for your consideration a program that has a much better chance of protecting people. Simply stated, it is to require that chemical manufacturers provide an MSDS with each HCS-covered product unit or, alternatively, to label each HCS-covered product unit with the critical information now contained in MSDSs. If this simple approach is used, the people working with a hazardous product will have immediate access to the information he or she needs to protect themselves each time the product is used. Such an approach will ensure that the worker will know what to do in the event of an accident. And this approach will do away with the costly, overwhelming and ineffective blizzard of paperwork now imposed on distributors and employers.

VI. CONCLUSION

The OSHA Hazard Communication Standard, laudable in its objective and for its preventative approach, is, in its current form, a confusing and expensive paperwork and compliance nightmare for wholesaler-distributors both as employers and as suppliers. The HCS's effectiveness in achieving the goal for which it was created is undermined by its complexity, sheer mass, and bloated paperwork requirements.

We are aware that the regulatory process is underway for the purpose of modifying the HCS. NAW and NAED have participated in that process, although I must say that I see nothing in the proposed rule that does anything more than make very modest changes in a few provisions.

NAW would encourage OSHA in the strongest possible terms to adopt as primary goals clarity, simplification, flexibility and paperwork reduction. This is critical for small wholesaler-distributors, Mr. Chairman, and the beneficiaries will be those the standard is intended to protect -- American workers.

Thank you again for the opportunity to testify this morning.

National Wholesaler-Distributor Organizations
Affiliated with the National Association of Wholesaler-Distributors

Air-conditioning & Refrigeration Wholesalers Association
American Machine Tool Distributors Association
American Supply Association
American Traffic Safety Services Association, Inc.
American Veterinary Distributors Association
Appliance Parts Distributors Association, Inc.
Associated Equipment Distributors
Association of Steel Distributors
Association of the Wall and Ceiling Industries-International
Automotive Service Industry Association
Aviation Distributors & Manufacturers Association

Bearing Specialists Association
Beauty & Barber Supply Institute, Inc.
Bicycle Wholesale Distributors Association, Inc.
Biscuit & Cracker Distributors Association

Ceramic Tile Distributors Association
Copper & Brass Servicemen Association
Council for Periodical Distributors Association
Council of Wholesale-Distributors
National Kitchen & Bath Association

Door & Hardware Institute

Electrical-Electronics Material Distributors Association
Engine Service Association, Inc.
Explosive Distributors Association, Inc.

Farm Equipment Wholesalers Association
Fire Suppression Systems Association
Fluid Power Distributors Association, Inc.
Food Industries Suppliers Association
Foodservice Equipment Distributors Association

General Merchandise Distributors Council
Graphic Arts Suppliers Association

Health Industry Distributors Association
Hobby Industry Association of America

Independent Medical Distributors Association
Industrial Distributor Association
Institutional & Service Textile Distributors Association, Inc.
International Sanitary Supply Association
International Truck Parts Association
Irrigation Association

Machinery Dealers National Association
Material Handling Equipment Distributors Association
Motorcycle Industry Council
Music Distributors Association

National Appliance Parts Suppliers Association
National Association of Aluminum Distributors
National Association of Chemical Distributors
National Association of Container Distributors
National Association of Decorative Fabric Distributors
National Association of Electrical Distributors
National Association of Floor Covering Distributors
National Association Floor Distributors, Inc.
National Association of Hose and Accessories Distributors
National Association of Manufacturing Opticians
National Association of Marine Services, Inc.
National Association of Meat Purveyors
National Association of Plastics Distributors
National Association of Service Merchandising
National Association of Sporting Goods Wholesalers
National Association of Tobacco Distributors
National Association of Writing Instruments Distributors
National Beer Wholesalers Association
National Building Material Distributors Association
National Business Forms Association
National Candy Wholesalers Association
National Commercial Refrigeration Sales Association
National Electronic Distributors Association
National Fastener Distributors Association
National Food Distributors Association
National Frozen Food Association
National Grocers Association
National Independent Poultry and Food Distributors Association
National Industrial Belting Association
National Industrial Glove Distributors Association
National Insulation Contractors Association
National Lawn & Garden Distributors Association
National Locksmith Suppliers Association
National Marine Distributors Association
National Paint Distributors, Inc.
National Paper Trade Association, Inc.
National Printing Equipment and Supply Association, Inc.
National Sash & Door Jobbers Association
National School Supply & Equipment Association
National Solid Waste Management Association
National Spa and Pool Institute
National Truck Equipment Association
National Welding Supply Association
National Wheel & Rim Association
National Wholesale Druggists' Association
National Wholesale Furniture Association
National Wholesale Hardware Association
Northamerican Heating & Airconditioning Wholesalers Association
North American Horticultural Supply Association
North American Wholesale Lumber Association, Inc.

Optical Laboratories Association
Outdoor Power Equipment Distributors Association

Pet Industry Distributors Association
Petroleum Equipment Institute
Petroleum Marketers Association of America
Power Transmission Distributors Association, Inc.

Safety Equipment Distributors Association, Inc.
Security Industry Association
Shoe Service Institute of America
Specialty Tools & Fasteners Distributors Association
Steel Service Center Institute
Suspension Specialists Association

Textile Care Allied Trades Association
Toy Wholesalers' Association of America

United Products Formulators & Distributors Association

Video Software Dealers Association

Wallcovering Distributors Association
Warehouse Distributors Association for Leisure and Mobile Products, Inc.
Water and Sewer Distributors of America
Wholesale Florists & Florist Suppliers of America
Wholesale Stationers' Association, Inc.
Wine & Spirits Wholesalers of America, Inc.
Woodworking Machinery Distributors Association
Woodworking Machinery Importers Association

National Association of Wholesaler-Distributors
1725 K Street, NW, Washington, D.C. 20006 • 202/872-0885

6/1/89

Statement

by

The Associated General Contractors of America

to

The Small Business Committee

of

The United States Senate

on

The Paperwork Burden That The Occupational Safety and Health Administration's Hazard Communication Standard Will Impose on Small Businesses
July 12, 1989

AGC is:

- More than 32,500 firms including 8,000 of America's leading general contracting firms, responsible for the employment of over 3,500,000 employees;
- 105 chapters nationwide;
- More than 80% of America's contract construction of commercial building, highways, industrial facilities and municipal utilities.

The Associated General Contractors of America (AGC) appreciates the opportunity to submit this statement to the Senate Committee on Small Business. The paperwork burden that the Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard will impose on small businesses remains a matter of great concern to AGC and its 32,500 members, the vast majority of which are small businesses.

The Hazard Communication Standard (HCS) requires employers to maintain copies of material safety data sheets (MSDSs) for each chemical product in the workplace, and to make these MSDSs readily accessible to employees in their work areas. In addition, all employers on multiemployer construction jobsites have to make MSDSs available to every other employer at a central location. These two requirements are particularly burdensome for small construction employers who often must work in several different locations at any one time.

AGC maintains that the evidence in the record of OSHA's current rulemaking clearly demonstrates that not only these paperwork requirements, but also other provisions of the HCS are unnecessary for the construction industry, and will be ineffective in the construction industry. AGC continues to recommend workable and realistic alternatives that would reduce the standard's unnecessary paperwork requirements while ensuring effective protection for construction workers. They are:

(1) OSHA should require construction contractors to maintain MSDSs in their home office, rather than on each and every jobsite;

(2) OSHA should recognize the transient nature of construction and allow for HCS training to be portable;

(3) OSHA should promulgate a finite list of hazardous chemicals found in construction and create a much broader exemption for consumer products; and

(4) OSHA should immediately begin development of a separate vertical HCS standard for the construction industry.

Also submitted for the record of this Committee's proceedings are AGC's formal comments on the hearings that OSHA conducted in December of 1988, in conjunction with the agency's latest and still unfinished round of rulemaking on hazard communications. AGC submitted these comments to OSHA, in the form of a brief, on March 15, 1989. A copy is attached.

OSHA Should Require Construction Employers to Maintain Material Safety Data Sheets Only in Their Homes Offices.

During the latest round of HCS rulemaking, the construction industry told OSHA of the huge number of material safety data sheets that construction contractors are now receiving on almost every product. Even small contractors have to maintain libraries of over 100 MSDSs, and many have to maintain 200 or more. With concern over the potential for product liability, manufacturers are now issuing MSDSs on virtually all of their products.

OSHA has advised AGC that MSDSs on such products are "not required." The HCS does not, however, provide non-manufacturing employers with any means of determining, for themselves, whether a product is hazardous. Neither construction employers nor the

many other small businesses subject to the HCS are equipped to perform their own chemical analyses of hundreds of different substances.

The paperwork burden is enormously compounded in the construction industry, because each contractor typically has numerous jobsites to bring into compliance. It is not unusual for even a small specialty contractor to have 10 to 15 jobs going at one time, and 100 in the course of a year. In order to protect themselves, contractors will be forced to maintain a separate library of MSDSs at each and every jobsite.

The evidence in the record shows that construction workers in the states with right-to-know laws have not requested copies of MSDSs. Even if construction workers did request copies, they would not likely find them helpful. Even the Small Business Administration has informed OSHA that "the information contained in most material safety data sheets contains lengthy and confusing details and terminology unrelated to a worker's use of a product or his safety. Material safety data sheets are designed for purposes other than worker protection and, hence, will not further that goal."

Given the highly technical nature of material safety data sheets, their limited utility in enhancing worker safety, and the enormous paperwork burden entailed in keeping a collection at <u>every</u> construction jobsite, AGC believes OSHA should, at most, require employers to make them available within a short period after receipt of a request. It would be far more reasonable, and

feasible, to allow contractors to maintain a library of material safety data sheets in their home office. Copies of requested sheets can be delivered to a site when supplies are delivered or by overnight mail. Copies could also be picked up by an employee from the home office on his or her way to work. The information on MSDSs could also be made immediately available by fax or telephone.

The Transient Nature of the Construction Workforce Requires Training to be Portable.

The HCS also requires each construction employer to provide each new employee with "basic training" in the recognition and handling of hazardous substances. This requirement also disregards the realities of the construction industry. While an employee may be "new" to a particular construction employer, he is not likely to be new to the industry. The resulting burden of duplication in training will be particularly difficult and costly for small construction employers to bear.

Repetitive training is not just costly. It damages the credibility of the trainer and is likely to have a negative effect on safety and health because it discredits efforts to train employees about genuine hazards.

The training burden on construction employers would be greatly reduced if OSHA provided a mechanism for making training portable, so that a subsequent employer could avoid having to provide basic training to all new employees, and could concentrate on any unique hazards a new employee may face at his or her particular workplace.

AGC submits that one method of accomplishing this would be for the worker to complete an OSHA-recognized training program on categories of hazards, provided by an employer or employer association, and receive a certification on which subsequent employers could rely.

OSHA Should Promulgate a Finite List of Hazardous Chemicals and Create a Much Broader Exemption for Consumer Products.

As outlined previously, non-manufacturing employers receive hundreds of material safety data sheets for products which are not apparently hazardous. But again, a construction employer that fails to duplicate these MSDSs, and maintain them on every construction jobsite, is violating the HCS.

OSHA has suggested that it might ask the manufacturers of these products to note on the MSDSs that the products they cover may not be subject to the HCS. It is unlikely, however, that many material safety data sheets would be marked in this fashion, given the concerns over product liability that are apparently motivating manufacturers to prepare MSDSs on almost every product.

OSHA has abdicated its responsibility to determine which substances are sufficiently hazardous in construction to justify their coverage under the HCS. In fact, OSHA has delegated that key decision to private manufacturers whose goal is to avoid product liability. AGC respectfully urges this Committee to ask OSHA why it cannot develop a definitive list of substances it considers sufficiently hazardous under conditions of normal use in construction to justify their coverage under the HCS.

OSHA should not expect small businesses to determine in every instance what is and is not hazardous. The agency should not force construction contractors to treat all substances for which manufacturers provide material safety data sheets as hazardous.

Both Labor and Management Agree on the Need for a Separate Vertical Standard for Construction.

Throughout the HCS rulemaking process, all the key parties representing both labor and management in construction have agreed that the unique characteristics of the construction industry justify a separate vertical standard governing hazard communication in construction. This has long been the position of OSHA's Advisory Committee on Construction Safety and Health. It was fundamentally wrong for OSHA to extend a manufacturing standard, designed for a permanent worksite and a stationary workforce, to an industry with completely different characteristics including multiple worksites and a transient workforce.

What is needed, and what AGC has repeatedly requested without result, is that OSHA finally take a serious, open-minded, hard look at the realities of the construction workplace and develop a separate standard that makes sense for the construction industry.

Conclusion

AGC is still waiting for OSHA to fulfill its statutory obligation and create an appropriate vertical hazard communication standard for the construction industry that:

1. Allows material safety data sheets to be maintained at the contractor's home office;

2. Provides for the portability of safety training; and

3. Sets forth a finite list of hazardous substances.

Mission Statement:

To develop and implement a construction industry-recognized skilled worker training model(s), beginning with the elementary grades and resulting in an adequate supply of qualified (competency certified) workers.

Training Committee Specific Objectives:

1. Develop training model(s)

   a. identify components chronologically

2. identify responsibilities & resources:

   1) Education

      a) elementary
      b) secondary
      c) post-secondary
      d) general/academic
      e) vocational

   2) Individual

   3) Government

      a) federal
      b) state/local

   4) Industry

      a) management
      b) labor

   5) Other

   b. establish minimum educational criteria for applicable components

3. Gain Acceptance of model(s)

4. Implementation of model(s)

5. Funding of program

UNITED STATES DEPARTMENT OF LABOR
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

PROPOSED STANDARD ON
HAZARD COMMUNICATION

Docket No. H-022D

THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA

POST-HEARING COMMENTS AND
BRIEF

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March 15, 1989

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The Associated General Contractors of America (AGC) counts more than 8000 of the nation's leading general construction contractors among its 32,500 members. Collectively, these firms perform more than 80% of the nation's contract construction of highways, buildings, municipal utilities and industrial facilities.

SUMMARY

Since OSHA did not address the unique characteristics of the construction industry in developing the current Hazard Communication Standard, AGC is pleased finally to have this opportunity to present its views on hazard communication in a rulemaking proceeding. AGC maintains that the evidence which it and other construction industry representatives have offered shows that portions of the Standard are unnecessary and counterproductive as applied to construction. In contrast, AGC's recommended alternatives would increase the protection for construction workers while significantly improving the standard's cost-effectiveness.

Now that AGC and other construction industry representatives have had an opportunity to be heard, the record shows as follows:

- The risk of exposure to genuinely hazardous chemicals in construction is comparatively low. Chemically related injuries are largely confined to skin irritations due to exposure to concrete. Tr. 12/13/88, pp. 20-21 (G. Czaplewski, AGC); p. 28 (P. King, AGC). Therefore, the nature and degree of risk in construction does not warrant the elaborate hazard communication scheme which OSHA has arbitrarily imposed upon the industry.

- 29 C.F.R. § 1926.21(b) effectively regulates communication of hazard information to construction employees, and OSHA is actively enforcing that standard. Ex. 4-199 (OSHA exhibit). It is the seventh most frequently cited OSHA standard.

- Employee training and product labels provide all of the chemical hazard information which a construction worker is likely to need in a work day. Tr. 12/13/88, pp. 35-36 (G. Czaplewski, AGC); pp. 37-38 (P. King, AGC); Tr. 12/12/88 pp. 39-42 (W. Nemeth, CIHCC).

- MSDSs are not likely to be read and understood by the average construction worker, since they are technical documents requiring an exceptionally high level of reading comprehension to be understood. Ex. 18, p. 8 (Frank S. Swain, Esq., SBA); Tr. 12/13/88, p. 8 (R. Peyton, AGC).

- The requirement that each employer provide all employees with "basic training" ignores the fact that while an employee may be "new" to a particular employer, he is not likely to be new to the industry. Repetitive and highly technical training damages the credibility of the trainer and is likely to have a negative effect on safety and health because it discredits efforts to train employees about genuine hazards. Tr. 12/13/88, p. 34 (E. Hayden, AGC).

- The construction industry has a high degree of employee turnover, and the average employee is likely to work for several employers in a short period of time. Tr. 12/13/88 p. 18 (G. Czaplewski, AGC); p. 26 (P. King, AGC). Thus, contrary to OSHA's conclusion, as the standard is presently drafted, the training burden on construction is hardly minimal and non-recurring. Tr. 12/13/88, p. 25 (P. King, AGC).

- Although the number of genuinely hazardous chemicals on a construction worksite is relatively low, construction employers receive numerous MSDSs on products which would not generally be regarded as dangerous, such as flashlight batteries, crayons, tape, and hand cleaner. Tr. 12/12/88 p. 51 (T. Godwin, CIHCC). Since contractors lack the expertise or the resources to conduct hazard determinations on these products, they are forced

to rely on the manufacturer's representations and thus cannot ignore the MSDSs. As a result, construction employers would be required by the standard to keep copies of hundreds of MSDSs at every worksite. Tr. 12/13/88, p. 12 (G. Czaplewski, AGC); p. 23 (P. King, AGC); Tr. 12/12/88 p. 31 (T. Godwin, CIHCC).

- Construction contractors operate a large number of worksites during any given year, and many of these sites work concurrently, thus compounding the burden of maintaining MSDSs on site. Tr. 12/13/88, p. 16 (G. Czaplewski, AGC); p. 63 (P. King, AGC).

All of the key parties representing both labor and management construction interests in this rulemaking agree that the unique characteristics of this industry make a vertical standard governing hazard communication essential. This has long been the recommendation of the Advisory Committee On Construction Safety and Health. See, e.g. Tr. 12/13/88 p. 121 (BCTD); Ex. 4-111 (Tr. March 30, 1988 ACCSH meeting). This does not mean merely reprinting the general industry Hazard Communication Standard in Part 1926. What is required, and what AGC requests, is that OSHA finally take a serious, open minded, hard look at the realities of the construction workplace and develop a standard which makes sense for the industry.

AGC's members are prepared to provide their employees with the hazard information necessary to protect them from harm. AGC objects, however, to the agency's stubborn application of a standard designed for the manufacturing workplace, with permanent worksites and a stationary workforce, to an industry whose

characteristics are far different. Rather than trying to force a square peg into a round hole, AGC calls upon OSHA to fulfill its statutory obligation and create an appropriate vertical standard for the construction industry.

I. This Rulemaking Does Not Satisfy the Requirements of the Act as to Notice and Burden of Proof

Under sections 3(8) and 6(b)(5) of the Act, in promulgating any health standard, the burden is on OSHA to show that the standard is reasonably necessary to reduce a significant risk of material health impairment to workers in each affected industry. 1/ Under section 6(b) and the Administrative Procedure Act, OSHA also is required to give affected persons an opportunity to comment on a proposed standard before it is put into effect.

As OSHA is aware, it is AGC's position that in developing the hazard communication standard for manufacturing which was eventually extended to regulate construction, OSHA satisfied neither of these statutory requirements. 2/ AGC further submits

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1/ Industrial Union Dep't, AFL-CIO, v. American Petroleum Institute, 448 U.S. 607 (1980)(API); Texas Independent Ginners Ass'n v. Marshall, 630 F.2d 398 (5th Cir. 1980).

2/ AGC likewise understands that the Third Circuit has found to the contrary in Associated Builders & Contractors, et al. v. OSHA, 862 F.2d 63 (3d Cir. 1988). Of course, AGC has petitioned the Supreme Court to review this decision, and submits its Petition for Certiorari as an exhibit to this brief. The Associated Builders and Contractors, and the National Feed and Grain Association, have likewise sought Supreme Court review of the Third Circuit decision. Finally, the Solicitor General has sought Supreme Court review of the Third Circuit's decision setting aside OMB's disapproval of portions of the revised standard under the Paperwork Reduction Act.

that OSHA has not satisfied these requirements with this rulemaking.

A. The Agency Ignored the Construction Advisory Committee, Did Not Give Proper Notice of a Proposed Construction Standard, and Has Raised Serious Doubts as to Whether It Approaches This Rulemaking With an Open Mind

At its meeting on March 30, 1988, the Advisory Committee on Construction Safety and Health unanimously adopted the following resolution:

> The committee believes that OSHA should consider modifying any portion of the standard as it applies to construction if evidence is presented to the agency showing modification is appropriate. Therefore, it should be clear that the record is formally reopened as to all aspects of the standard as applies to construction, not just as to those specific provisions addressed by OMB or proposed for modification by OSHA.
>
> To accomplish this, OSHA should state in a Federal Register notice that the entire standard as applies to construction is to be considered as a proposed standard so that the record would be formally open to comments and testimony on all aspects of the standard.

Transcript of ACCSH Meeting, March 30, 1988, pp. 26-27. The concern which prompted the motion, as explained by its sponsor, public member Leonard E. Dodson, was that "it appears that the construction industry is not going to be given a chance to be heard. OSHA evidently is going to try to finesse just enough rulemaking to legally satisfy OMB without really giving the industry a chance to be heard." Id. at pp. 25-26.

Notwithstanding the Advisory Committee's recommendation, the agency seems to have done exactly what Mr. Dodson feared and predicted. Thus, in the Notice of Proposed Rulemaking (NPRM) which initiated this proceeding, OSHA stated that it would address the

concerns of those who commented on the revised standard following its promulgation, and that it would collect data regarding three provisions of the revised standard which had been disapproved by the Office of Management and Budget (OMB). OSHA further stated that it is "interested in receiving comment on other issues that may be related to the proposal," and that "[i]n order to assist OSHA in its development of the final HCS in the nonmanufacturing sector, comment will also be accepted and considered concerning the entire rule's application to the nonmanufacturing sector." 53 Fed. Reg. 29624 (August 8, 1988).

On the other hand, however, the agency cautioned participants that most of the information submitted as of that date had not convinced the agency that changes were warranted. Id. Accordingly, the agency announced that:

> OSHA does not expect the standard to further change significantly unless the Agency is presented with substantial evidence that a regulatory modification is clearly necessary, either because the present standard is demonstrably infeasible in a specific respect, or because the proposed alternative would significantly increase the standard's intended safety and health benefit or significantly improve its cost-effectiveness.

Id. at 29826.

The net effect of these inconsistent pronouncements was to give notice that the agency did not commence this rulemaking with an "open mind" as to the application of the standard to construction. Indeed, it suggests that the rulemaking was initiated only to satisfy OMB, and that it is but a cosmetic sham.

This impression was confirmed by the opening statement on the agency's behalf at the hearing by Mr. Charles Adkins, Director of the Directorate of Health Standards. Addressing specifically the construction industry's claim that significant risk justifying the standard in construction had never been shown, Mr. Adkins stated:

> At this point coverage of any given industry is not an issue under the Rule. The issue has already been litigated, and the courts have found that all employees exposed to hazardous chemicals are entitled to adequate information * * * The 1987 final rule was found to be economically feasible, based on the record available to the agency at that time, and no persuasive evidence has been presented to the contrary.

Tr. 12/6/88, pp. 27-28.

In response to AGC's cross examination, Mr. Adkins sought to backtrack somewhat from his stated position, but in so doing revealed that the agency already made judgments about the rulemaking record before the rulemaking was completed. Thus, as the Federal Register notice had stated, he said that while the question whether construction should be regulated by the final rule was one which the agency would consider, "up to this point we have not seen anything to make us change" the standard's coverage. Tr. 12/6/88 p. 34. Mr. Adkins also equivocated on whether the agency had concluded finally that there is significant risk in the construction industry sufficient to justify the standard. When asked to confirm that OSHA had "not finally concluded that there is significant risk in the construction industry," Mr. Adkins answered, "No, you cannot make that assumption," but then said "if there is new evidence that will come up, we will consider that new

there is new evidence that will come up, we will consider that new evidence." He then maintained that the agency still had an "open mind" on the issue of significant risk in construction.

AGC would like to accept Mr. Adkins' statements of open-mindedness at face value; however the OSHA staff's defensiveness, detectable whenever the staff responded to any criticism of the rule during the hearing, suggests to the contrary. Moreover, Mr. Adkins' more conciliatory statements do not cure the fatal defect in the Federal Register notice which gave readers the impression that the agency would resist reconsideration of the rule as applied to construction.

B. The Agency Has Applied an Improper Burden of Proof to This Proceeding

The burden of proof which the agency has stated contractors must satisfy to achieve modification of the standard has no foundation in the Act, and its application to this proceeding invalidates the proceeding from the start. Nothing in the statute or the agency's implementing regulations places the burden on affected parties to prove by substantial evidence that modification of a proposed or even existing standard is "clearly necessary," because the standard is "demonstrably infeasible," or because the modification would increase the standard's intended benefit or significantly improve its cost-effectiveness.

The agency cannot have it both ways. If the burden is to be placed on contractors to prove that a modification is necessary, this is not a rulemaking in conformance with the Act, in that the

agency starts with a closed mind. On the other hand, if the current standard is to be deemed a proposal for regulation of construction, the burden is on OSHA, not on contractors, to prove by substantial evidence that the final standard is reasonably necessary to reduce a significant risk.

We now show that applying any test, the rulemaking record as a whole does not support the finding that the standard is reasonably necessary to reduce a significant risk of material health impairment in construction.

II. The Record Does Not Contain Substantial Evidence That the Standard is Reasonably Necessary to Address a Significant Risk.

A. The Record Does Not Adequately Demonstrate a Significant Risk In Construction.

OSHA concluded in 1983 that the manufacturing HCS was necessary to reduce a significant risk of harm due to chemically related disease. 48 Fed. Reg. 53283 (November 25, 1983). In 1987, OSHA expanded the HCS to cover non-manufacturing industries without making a finding that a similar significant risk existed in those industries. The record compiled in the 1982 rulemaking proceeding does not provide substantial evidence for a construction standard. OSHA conceded in its Petition for Rehearing filed in USWA v. Pendergrass, No. 83-3554 (3rd Cir.) that "it was apparent in 1985 that the record developed for the HCS did not reflect conditions in non-manufacturing industries because it focused on existing practices and desirable implementation methods in manufacturing

industries." Petition at 9. The Secretary cited construction as an example of an industry for which it lacked such evidence. Id.

A review of the HCS record reveals that the Secretary's assertion then was correct. While some commenters in the initial HCS rulemaking urged OSHA to develop a proposal for construction, there was no record evidence of significant risk in construction when the HCS was issued. Nor was evidence of significant risk added to the docket in support of the revised standard. The Regulatory Impact Analysis (RIA) supporting the revisions merely estimated patterns of employee exposure to establish a baseline from which to calculate the expected benefit of the standard. It did not establish that there is a significant risk.

Likewise, no evidence of risk was added after the publication of the revised HCS, or during this rulemaking. The 1985 BLS statistics inserted in the record by OSHA after the revised standard was promulgated reflect extremely low incidence rates in construction for occupational illnesses which might be traceable to exposures to hazardous chemicals -- consistently less than 50% of the rates reported for manufacturing, wholesale and retail trade, and the services industry. Ex. 4-10, Table 8 (p. 47).

Dr. Hugh Conway of OSHA's Office of Regulatory Analysis asserted that the 1987 BLS statistics showed an "illness problem in the construction sector." Tr. 12/6/89 pp. 42-43. If this is correct, however, the problem must have arisen after 1985, since its earlier existence is not confirmed by the earlier BLS data. Moreover, at the rulemaking hearing, Dr. Conway offered to place

the 1987 BLS Statistics into the record "to support the general comments I have just made. And making the case that there is, indeed, a problem in construction." Tr. 12/6/88 p. 43. He did not do so, and no such data appears in the record.

The record evidence which does appear regarding chemical-related injuries in construction reveals that the risks are few and well-known. Mr. Gilbert Czaplewski, General Superintendent and Vice President of Klug and Smith, a small to medium-sized Midwest general contractor, reported that during the last 2,182,587 manhours worked, his company has had only 3 injuries which would have been covered by the revised HCS. Of these, two were concrete skin irritations, and the third was metal fume fever which resulted in seven days lost time only because of a rural doctor's unfamiliarity with its symptoms. Tr. 12/13/88 pp. 20-21. Similarly, according to Paul King, Safety and Loss Control Manager, Pizzagalli Construction, that company had two chemical-related injuries in the past three years, both of which were concrete skin irritations, and none of which involved lost time. Tr. 12/13/88 p. 28.

These two typical examples reinforce the BLS statistics quoted above, which reflect a very low incidence rate for construction. BLS reports a higher incidence rate (2.6) for "skin diseases or disorders" -- obviously reflecting the type of "concrete burns" reported by AGC representatives. This rate is still far less than the "skin disease or disorder" rates in manufacturing (21.1),

wholesale and retail trade (4.0) and services (9.4). Ex. 4-10 p. 47. 3/

During the hearing, AGC sought to ascertain from the Building and Construction Trades Department, AFL-CIO (BCTD), how seriously its members take the risk of chemical exposure in construction, by inquiring whether this issue is covered in construction union apprenticeship training programs. Unfortunately, BCTD refused to provide any such information, and even objected that the question was irrelevant. Tr. 12/13/88 pp. 134-136. It would appear, however, that if BCTD truly believes that chemical hazard exposure is a major risk to workers, it would readily have introduced evidence showing the emphasis placed on these concerns in apprenticeship training. 4/ The failure to produce any such

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3/ The fact that the occurrence of "concrete burns" in construction accounts for most of the incidence rate is not surprising. Concrete is an alkaline, which can cause a skin rash, and it is also abrasive. Ex. 11-135, p. 4. In addition, a small percentage of people become sensitive to concrete and develop cement dermatitis. Ex. 44-G, p. 45. These injuries can occur even to experienced employees who are well aware of the potential for concrete burns, merely because they may occasionally be careless.

4/ The Sheet Metal Workers gave a revealing answer to this question, conceding that only six (6) hours of training are spent addressing chemical hazards in 3 to 4 years of apprenticeship training. Tr. 12/12/88, p. 107.

evidence, coupled with an objection to its relevance, speaks volumes.

Indeed, the BCTD has offered little evidence to show a risk of chemical hazard exposure in construction. The BCTD did not participate in the 1982-83 HCS rulemaking; its comments to the 1985 ANPRM merely advocated a vertical standard in construction, Ex. 2-141; and its written testimony in this proceeding offered only the unsupported conclusion that those who argued the lack of significant risk are wrong. Ex. 46. Broad assertions are no substitute for substantial evidence.

B. Because an Existing OSHA Standard Adequately Regulates Hazard Communication In Construction, the Revised HCS Is Not Reasonably Necessary to Protect Employees

When it expanded the standard to cover all industries including construction, OSHA ignored the fact that the construction industry is already regulated by a hazard communication standard, 29 C.F.R. § 1926.21(b), which provides:

> § 1926.21 Safety training and education.
>
> (b) Employer responsibility. (1) The employer should avail himself of the safety and health training programs the Secretary provides.
>
> (2) The employer shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury.
>
> (3) Employees required to handle or use poisons, caustics, and other harmful substances shall be instructed regarding the safe handling and use, and be made aware of the potential hazards, personal hygiene, and personal protective measures required.
>
> (4) In job site areas where harmful plants or animals are present, employees who may be exposed shall

be instructed regarding the potential hazards, and how to avoid injury, and the first aid procedures to be used in the event of injury.

(5) Employees required to handle or use flammable liquids, gases, or toxic materials shall be instructed in the safe handling and use of these materials and made aware of the specific requirements contained in subparts D, F, and other applicable subparts of this part.

(6)(i) All employees required to enter into confined or enclosed spaces shall be instructed as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of protective and emergency equipment required. The employer shall comply with any specific regulations that apply to work in dangerous or potentially dangerous areas.

(ii) for purposes of paragraph (b)(6)(i) of this section, "confined or enclosed space" means any space having a limited means of egress, which is subject to the accumulation of toxic or flammable contaminants or has an oxygen deficient atmosphere. confined or enclosed spaces include, but are not limited to, storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, pipelines, and open top spaces more than 4 feet in depth such as pits, tubs, vaults, and vessels.

This standard is functionally very similar to the revised HCS in the areas that really matter -- the communication of hazard information to employees so that they will not unwittingly expose themselves to injury. It is, therefore, incumbent upon OSHA under section 3(8) of the Act to demonstrate how the additional obligations imposed by the revised HCS are reasonably necessary to provide protection not provided by the existing standard. API, supra.

The BCTD asserted that § 1926.21 is too general in nature, and claimed broadly that construction employers do not comply. Tr. 12/13/88 p. 78. BCTD further claimed that most employers were not aware of § 1926.21, and that OSHA's enforcement of the standard is limited. The evidence adduced at the hearing and recently published data concerning OSHA inspection activity reveals the inaccuracy of these contentions.

AGC's witnesses testified at length concerning the hazard training they already perform in compliance with § 1926.21. Mr. Czaplewski explained that his company conducts gang box meetings, supervisory training, programs sponsored by AGC, and any additional training recommended by the insurer. These programs include chemical hazard training. Tr. 12/13/88 pp. 35-36. Likewise, Pizzagalli Construction conducts employee safety orientations, uses a new company video to train employees, and conducts weekly safety talks, all of which include instruction on the hazardous chemicals which employees are likely to encounter. Tr. 12/13/88 p. 37. AGC Safety and Health Services Director Robert Peyton told the OSHA panel about the safety training programs AGC provides for its members, dating back to 1929, including the Hazardous Substance

Guide for Construction (1977). Tr. 12/13/88 p. 38 and Ex. 44-E. 5/ Edward Hayden, Safety Director for the AGC Chapter of Greater Milwaukee, Wisconsin, detailed the many services which AGC has historically provided to its members to assist them with safety and health education for their employees, including help with the creation and administration of safety and health programs, technical assistance to safety personnel, OSHA compliance assistance, general newsletters, sample tool box talks, technical guides, and actual employee safety training for specific industry hazards. Tr. 12/13/88 p. 30.

Similarly, once they understood the cross-examination question being posed to them by the OSHA panel, other construction industry representatives testified that they likewise provide their employees with safety training, including training on hazardous chemicals. Mr. Dennis Neal, of Neal's, Inc., a mason contractor,

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5/ Other parties to this hearing have sought to make much of the fact that AGC has prepared and distributed to its members a "Hazard Communication Compliance Guide For Construction," which explains the revised HCS and offers compliance advice. Ex. 44-G. While AGC acted as a responsible trade association by preparing the Guide for the convenience of its members in the event the revised standard would be enforced in the industry, the Foreword to the Guide states the revised HCS is unworkable in construction and notes expressly that compliance with its suggestions would not produce complete compliance with the standard. Rather, it would produce a reasonable level of employee protection pending the outcome of litigation over the revised standard's validity. The fact that AGC and other construction industry associations have attempted to alleviate some of the compliance burden for their members cannot be construed as an admission that full compliance is possible, let alone easy, for the industry.

explained that his company trains workers on proper handling of hazardous substances such as muriatic acid. Tr. 12/12/88 p. 46. Mr. Thomas J. Godwin Jr., of D & G Electric Co., has a strict safety program, including hazardous chemical training, with extra training for those employees who perform work in factories and need to know what chemicals are there. Tr. 12/12/88 p. 48.

This testimony reflects that contractors are conducting the hazard training under § 1926.21(b). It remains for OSHA to show that the additional requirements of the revised standard provide a significant additional measure of safety.

It is also inaccurate to assert that OSHA is not enforcing § 1926.21. Between fiscal year 1982 and fiscal year 1987, OSHA issued 4,205 citations for violation of § 1926.21(b), 3,814 of which were for § 1926.21(b)(2) governing hazard training. Ex. 4-199. In fiscal year 1988, OSHA issued 2,356 citations for violation of § 1296.21(b)(2), making it the seventh most-often-cited standard for the year. Occupational Safety and Health Reporter (BNA), Vol. 18, No. 39, p. 1668 (March 1, 1989).

The argument has also been made that § 1926.21 is too general and is therefore difficult to enforce. However, OSHA's Office of Construction and Maritime Compliance Assistance has issued OSHA Instruction STD 3-1.1 (June 22, 1987) which provides compliance officers with guidance on interpretation and enforcement of this section, including a detailed checklist for evaluation of an employer's safety and health program. Ex. 4-152. A draft of this document was endorsed by the Advisory Committee On Construction

Safety and Health at its April 30, 1986 meeting. At that meeting, the Committee, including the two witnesses who testified for the BCTD in this proceeding, offered suggestions for changes which were incorporated into the final document. Ex. 4-166. In sum, given the low incidence rate in construction, the record does not show that the additional, essentially procedural, requirements of the revised HCS supply an additional measure of safety beyond that provided by § 1926.21(b) which makes those requirements reasonably necessary under § 3(8) of the Act. The standard, therefore, does not satisfy the Act's requirements.

In a last-minute effort to fill the evidentiary void, OSHA has entered numerous exhibits into the record to demonstrate that there are chemical hazards in construction. Exhibit 4-98 is an AGC publication listing the chemicals found in concrete and concrete-related products. Exhibit 71-17 is a news article regarding a jury award to a carpenter exposed to inadequately labeled products used to make poured flooring and noting that the label was amended in 1986 in compliance with the manufacturing HCS. Exhibit 71-18 is another news article dealing with an explosion involving construction trailers filled with a chemical used in dynamite. Exhibit 71-31 is an article on lead exposures in construction.

These reports add nothing new to the record. Contractors have long been aware of the potential for concrete burns, and news articles are of dubious evidentiary value. AGC does not contend that there are no chemical hazards in construction. Rather, AGC

maintains that the hazards which exist are well known to employers and employees alike, and that those hazards do not occur with a frequency or intensity which merit the elaborate mechanisms of the revised HCS.

III. The Requirement That MSDSs Be Maintained on Construction Worksites Is Unrealistic

A. Requiring MSDSs on Each Construction Worksite Creates a Massive Paperwork Burden.

The revised HCS requires that employers "maintain copies of the required material safety data sheets for each hazardous chemical in the workplace, and . . . ensure that they are readily accessible during each work shift to employees when they are in their work areas." ¶ (g)(8). In a multi-employer workplace, the various employers are required to provide each other with copies of the MSDSs or make them available at a central location. ¶ (e)(2)(i).

In the preamble to the revised HCS, OSHA declined to specify precisely how employers at a multi-employer site should make MSDSs available to each other. Instead, without evidentiary support, OSHA suggested that "[i]n many cases, it would probably be most efficient for the general contractor to coordinate the function. For example, the general contractor could keep and make available material safety data sheets in the office on the site." 52 Fed. Reg. 31852, 31865 (August 24, 1987).

OSHA has since announced, however, that the required "central location" need not be the same location for each contractor, and need not even be stationary, since it is permissible for each

contractor's MSDS collection to be kept, for example, in a pick-up truck on site. See (Advisory) Guidelines for Employer Compliance, 53 Fed. Reg. 29852, 29855 (August 8, 1988); Tr. 12/6/88 pp. 75-76. This adjustment appears to reduce at least somewhat the massive paperwork burden which OSHA's suggestion would create for general contractors. It does not come close, however, to solving the entire problem. Thus, as OMB recognized when it disapproved the requirement of MSDSs on multi-employer worksites, an enormous volume of paperwork is required for each contractor to keep a complete collection of MSDSs on each active site, even without the requirement for an exchange. 52 Fed. Reg. 46075, 46077 (December 4, 1987).

Construction industry witnesses told the OSHA panel about the blizzard of MSDSs they routinely receive. Mr. Czaplewski of Klug and Smith, Inc., submitted a copy of his master file of MSDSs consisting of four three-inch binders containing 508 separate MSDSs. Ex. 13-39. Mr. King of Pizzagalli Construction Company testified that his company has a library of 200 generic MSDSs for job site use, and maintains 700 product-specific MSDSs at its main office. Tr. 12/13/88 p. 23. Similarly, Mr. Thomas Godwin, an electrical subcontractor testifying on behalf of the Construction Industry Hazard Communication Coalition, said that he has over 100 MSDSs. Tr. 12/12/88 p. 31.

Moreover, when OSHA requires that MSDSs be kept at the worksite, it appears to ignore that contractors have numerous worksites, not just one. Pizzagalli Construction runs 25 - 30

projects simultaneously. Tr. 12/13/88 p. 63. Klug and Smith have 15 to 20 jobs going at a time, Tr. 12/13/88, p. 63, and had 176 separate projects in the past year. Tr. 12/13/88 p. 16. This testimony demonstrates that the actual number of MSDSs required far exceeds OSHA's estimates.

Maria Makris-Gouvas, Esq., counsel for BCTD, suggested that it would be feasible for each contractor to place a computer on each jobsite and maintain a computerized library of MSDSs. Tr. 12/13/88 p. 84. To paraphrase some of the Building Trades' past criticisms of AGC's views, and with due respect to counsel, this idea was obviously conjured up by a lawyer, and does not reflect the reality of the construction industry. According to evidence submitted to the docket by OSHA itself, while many contractors are purchasing personal computers, they are for the main office, not for each job site. Ex. 4-163. Providing a computer on each worksite would be prohibitively expensive for the small contractors who comprise 80% of the construction industry. Moreover, merely because AGC spent $8,000 to amass a database of MSDSs does not mean that its individual members can afford the hardware and software necessary to provide a computer link to that database for each job site.

Indeed, it is particularly revealing that while the BCTD asserts that MSDS databases are readily available to small contractors, BCTD refused to even answer whether the BCTD's international headquarters or those of its constituent international members have such databases. Likewise, the BCTD

refused to answer whether local trades unions have access to a MSDS database. In both cases, the union objected to the relevance of the question. Tr. 12/13/88 pp. 128-129. The reluctance to answer is revealing, for the idea is unwieldly and prohibitively expensive.

OSHA and the unions also appear to assume that since the standard only requires employers to provide MSDSs on the worksite for those chemicals to which its employees will be exposed, it will be a simple matter to collect only those MSDSs which are necessary and deliver them to the site. This analysis ignores the reality that all sites are different, and that the burden of sorting through a master MSDS library to attempt to select the correct MSDSs, and repeating the exercise each time work begins for a new site, will be equal to or greater than the burden of copying the entire collection.

B. MSDSs Are Not Sufficiently Useful to the Typical Construction Worker to Justify the Requirement.

According to the OSHA staff's testimony, the requirement that a MSDS collection be maintained on every construction worksite is premised in large part, if not entirely, on the assumption that workers will request copies of the MSDSs, will take them home, study and digest them. Tr. 12/6/88 p. 67 (J. Silk). The evidence shows this assumption to be more than a little unrealistic.

Construction industry representatives testified at the hearing that in their experience, workers do not request MSDSs. Edward Hayden, Safety Director for AGC's Greater Milwaukee Chapter,

testified that to his knowledge, during the six years that Wisconsin has required contractors to provide MSDSs on request, not one construction worker has asked for a MSDS. Tr. 12/13/88 p. 31. William L. Nemeth, a painting subcontractor, said that while his employees have all been trained on MSDSs, not one has desired to own one. Tr. 12/12/88 p. 38. Gilbert Czaplewski reported that what workers in a training session told him he could do with MSDSs would not be "fit to print" in the New York Times. Tr. 12/13/88 p. 17.

Workers are even less likely to comprehend the substance of MSDSs, let alone "study . . . and digest them." According to the Small Business Administration, "the information contained in most MSDSs contains lengthy and confusing details and terminology unrelated to a worker's use of a product or his safety. MSDSs are designed for purposes other than worker protection and, hence, will not further that goal." Ex. 18, p. 8.

Robert Peyton, AGC's Director of Safety and Health Services, observed that "[m]aterial safety data sheets are highly technical. They require a far higher level of reading comprehension than the standards used by government, business and industry educators have found to be appropriate for technical materials intended for general public use." Tr. 12/13/88 p. 8. Mr. Peyton explained that those standards call for a sixth to tenth grade reading level, while AGC's computer analysis of a random sample of MSDSs on common products used in construction revealed a required average reading level of 15.49. Id. As Mr. Hayden testified, "If you think that

these people are going to read MSDSs, no less take them home, as I understand was suggested in this hearing by the OSHA staff, you are just not operating in the real construction world." Tr. 12/13/88 p. 33. 6/

C. **OSHA Has Already Recognized That Non-Manufacturing Employers Receive MSDSs on Products Which Common Sense Shows Are Not Hazardous.**

As shown above, during the hearing, the OSHA panel heard several construction industry representatives testify to the sheer volume of MSDSs they receive and would be required to duplicate and maintain on each construction site under the HCS. Thomas J. Godwin Jr. showed OSHA MSDSs provided by manufacturers of flashlight batteries, crayons, electrical tape, and hand cleaner. Tr. 12/12/88 pp. 50-51. OSHA's response to Mr. Godwin was that MSDSs on such items were "not required." Id. at 51. (J. Silk). OSHA also said that product-specific MSDSs may not be necessary when generic ones will suffice. Tr. 12/6/88 pp. 51-52.

6/ Mr. Hayden pleaded with OSHA:

> "Please don't force people like me to waste my time and limited resources collecting and teaching MSDSs to construction people. First, they address only a small part of what are really the safety problems in construction. Second, the people do not want to hear technical information and they won't understand it. I want to be able to tell them what they really need to know about how to protect themselves, and not insult their intelligence by putting technical pieces of paper in their hands, which we both know they will not understand, or use. Indeed, I don't understand all of the technical information found in material safety data sheets. As a safety trainer, I have to maintain credibility with the people who I am trying to train. If I have to force-feed them technical jargon about theoretical hazards, which are not part of their every day experience, when I try to tell them about hazards they really need to worry about, they just won't listen."

What OSHA apparently has not considered is that a non-manufacturing employer who receives a MSDS for a product is not permitted under the standard to assume that the product is not hazardous, and thus not covered, unless he conducts his own hazard determination. Moreover, if he assumes that a generic MSDS is adequate for particular products, he will be held accountable if it is not and he has not performed his own evaluation. Thus, ¶ (d) of the standard states, in part, "Employers are not required to evaluate chemicals unless they choose not to rely on the evaluation performed by the chemical manufacturer or importer for the chemical to satisfy this requirement." ¶ (d)(1). Obviously, the vast majority of construction contractors do not have the expertise necessary to perform hazard determinations according to the standard's exacting requirements, nor do they have the resources to contract with experts to perform such evaluations. Thus, on a practical matter, they must accept the manufacturers' characterizations of a product's hazardousness.

Frequently manufacturers provide MSDSs with their products for their own reasons such as protection against product liability suits. The resulting proliferation of MSDSs on essentially non-hazardous products has added to the enormous burden on construction employers. Even if, as suggested, OSHA asked the manufacturer to note on the data sheet that it was "not required" for hazard communication, it is likely that few MSDSs would be so marked, for the same reasons that the MSDSs were prepared and distributed in the first place.

Once again, OSHA has failed to consider the practical impact of its hazard communication scheme on construction contractors. More importantly, OSHA has abdicated its responsibility to determine which substances are sufficiently hazardous in construction to warrant an MSDS, and has improperly delegated the decision to private manufacturers whose goal is to avoid product liability. AGC calls upon OSHA to develop a definitive list of the substances it considers sufficiently hazardous under conditions of normal use in construction to warrant the application of the standard. This would place the responsibility for making this determination on OSHA, where it belongs, and would free contractors from having to treat all substances for which manufacturers provide MSDSs as hazardous.

D. The Common Sense Solution Is to Maintain a Single Set Of MSDSs at the Company's Main Office, Not Duplicate Sets at the Worksites.

Since MSDSs are highly technical documents, it is difficult to understand why OSHA and certain unions find it crucial to have them available on the spot when the average worker does not want or comprehend them. OSHA has conceded that MSDSs need not be immediately available, but merely "readily accessible." Tr. 12/6/88 at 59 (C. Adkins). Given the limited utility of an MSDS and the enormous paperwork burden of keeping a MSDS collection at every construction site, it clearly would be sufficient to have MSDSs available within a short period after a request for one is received. Thus, under the California state plan, for example, where employees do not report to a fixed worksite on a regular

basis, an employer may make the contents of a MSDS available by telephone, radio or other means in a timely and reasonable manner, and thereafter, if requested, make the actual MSDS available as soon as possible. Cal. General Industry Safety Orders, Title 8, § 5194(g)(8).

AGC and other construction representatives recommended that it would be far more reasonable to allow contractors to maintain a library of MSDSs at each contractor's home office. First, under § 1926.21(b), workers will already have training regarding the hazards of chemicals to which they may be exposed, as well as emergency and first aid information. Additional information will be available on the container label. If a worker's curiosity or concern is not satisfied by either of these sources, surely he could accept information read over the telephone from an MSDS, with a copy to be delivered as soon as possible. Even if each contractor has a complete MSDS collection on a job site, a photocopying machine is unlikely to be available on the spot. Surely OSHA does not expect contractors to give away the only copy of a MSDS on site, or to maintain duplicates of MSDSs on each worksite against the outside chance that someone will ask for one. If, as the OSHA staff suggested, the purpose is to allow workers to take the MSDS off site, then the real requirement of the standard is to have multiple copies of each MSDS on site, or a copying machine at each site. Either result is patently absurd.

OSHA attempted to respond to the construction industry's proposal to allow one set of MSDSs to be kept at the home office

and provided on request by preparing a purported cost analysis of the proposal. Ex. 71-70. Not unexpectedly, the agency concluded that it would in fact be less expensive to maintain a complete collection of MSDSs on each work site. OSHA's analysis is hardly realistic.

The new cost analysis assumes, without any evidentiary basis whatsoever, that 15% of MSDSs maintained would be requested annually, when AGC's evidence demonstrated that MSDSs are rarely requested. It also presumes that in every instance, some central office employee would have to make a special trip to the site to deliver the MSDS. A more practical approach would be for the MSDS to be delivered to the site, whenever possible, when supplies were delivered, or for an employee to pick up the MSDS at the office on the way to or from work, and for a special trip to be made only if necessary to deliver the MSDS within a reasonable time.

The cost analysis then compares these obviously inflated figures to the 1987 RIA's woefully inadequate estimate of the cost of maintaining MSDSs on construction sites. The 1987 RIA assumed that the average construction site would have 9 MSDSs, when AGC's evidence showed hundreds more. According to the new cost analysis, the 1987 RIA also assumed that contractors have an average of 3 jobs per year, which is completely ridiculous. As Gil Czaplewski testified, a small to medium size contractor such as Klug & Smith had 176 jobs last year. Tr. 12/13/88 p. 16. Thus, OSHA's new analysis does not demonstrate that the existing

multi-employer worksite provision is more cost-efficient than the construction industry alternative.

OSHA has not shown, and cannot show, that the requirement to maintain a collection of MSDSs on every construction site is reasonably necessary to provide safe and healthful employment or places of employment. The Office of Management and Budget disapproved 7/ this requirement, and instead recommended that a third option be added to ¶ (e)(2)(i) which would:

> require employers at multi-employer worksites to keep labels intact on any containers they bring onto the worksite; to train their employees in the hazards with which they work directly, in recognition of and response to the general hazards that are likely to be introduced by other employers, and in the need to observe hazard labels on the worksite and request MSDSs when further information is needed; and to provide MSDSs to other employers upon request.

52 Fed. Reg. 46075, 46077. As OMB explained, "[t]his approach would ensure that all employees at a worksite would have access to all MSDSs upon request. This approach relies on labels and general hazard training to protect workers from substances brought onsite by other employers." Id.

7/ As noted above, the OMB disapproval was overruled by the Third Circuit in United Steelworkers of America v. Pendergrass, 855 F.2d 108 (3d Cir. 1988). The Solicitor General has filed a petition for a writ of certiorari with the Supreme Court. Dole v. USWA, No. 88-1434.

This approach is eminently reasonable. As shown above, given that labels and training are already required by the revised HCS, the only reason for requiring contractors to provide MSDSs on site is so that an employee request to see a MSDS, if such a request ever comes, can be fulfilled on the spot. However, labels are already required to contain the chemical identity and hazard warnings including target organ effects. ¶ (f). Employee training must include physical and health hazards, methods of detecting hazards, and protective measures including emergency procedures and personal protective equipment. ¶ (h). While MSDSs contain a wealth of technical information about a product, they do not contain any information which is immediately necessary to anyone which would not already have been provided through training and labeling. Accordingly, common sense dictates that construction employers should be permitted to maintain MSDSs at a central office and provide them upon request within a reasonable time.

IV. Because Of The Transient Nature of the Construction Work Force, OSHA Should Provide Some Mechanism for Portability of Training.

As OSHA recognized in its June 1987 "Petition for Rehearing And Suggestion For Rehearing En Banc" filed in USWA v. Pendergrass, No. 83-3554 (3d Cir.), the construction industry workforce is not stable. Petition at 9. Construction industry representatives told the OSHA panel just how unstable that workforce can be. According to Paul King, in one year Pizzagalli Construction hired 594 persons to maintain a workforce of 97 -- a 600% turnover rate. Tr. 12/13/88 p. 26. Gil Czaplewski explained that Klug and Smith has

to hire more than three and a half people for 1600 hours of work, or the equivalent of 4 and a half people for what the industry considers a standard 2000 hours per year. Tr. 12/13/88 p. 18.

Under the revised HCS, the employer is responsible for "provid[ing] employees with information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new hazard is introduced into their work area." ¶ (h). This provision may require the construction employer to train six times as many people as a non-construction employer of the same size. As OSHA observed at the hearing, the revised standard does not recognize that many of these employees may have already received training on the same substances from other -- indeed perhaps several --- employers. Tr. 12/16/88 p. 64.

The existing revised HCS also does not recognize the effect on employees who will be forced to sit through "basic training" time and time again. One construction employer testified that "Some of the old-timers told us that they had worked in the industry for many years, and did not need this training. 'What the hell do you think I am, stupid?' That was the reaction." Tr. 12/13/88, p. 17. (G. Czaplewski).

AGC appreciates OSHA's providing the docket after the hearing with magazine articles explaining how training can be made less boring. See Ex. 71-24. However, these articles do not address the problem of training workers who already know the information provided, but are being forced to sit through the session merely

because the employer has no way of documenting that a previous employer already provided the training.

It would greatly relieve the training burden on construction employers if OSHA would provide a mechanism for portability of training between employers, so that a subsequent employer could avoid having to provide "basic training" to each employee and could instead concentrate on any unique hazards the employee may face at his particular worksite. Perhaps one method might be for the worker to complete an OSHA-recognized training program on categories of hazards, provided by an employer or employer association and receive a certification on which a subsequent employer could rely. Ms. Margaret Seminario of the AFL-CIO agreed with this suggestion in concept. Tr. 12/14/89 pp. 78-79. In order for this to be accomplished, however, the revised HCS would have to be amended to provide for such a program. Rather than issue final rules for such a program in this rulemaking, however, which would mean that affected interests, including the Construction Advisory Committee, would have had no opportunity to study and comment on its terms, OSHA might announce in the final rule that it intends to develop such a program. Then, in consultation with the construction industry, the agency could fashion an approach to training portability which would be suitable for all sectors of the construction industry.

CONCLUSION

For these reasons, and those stated in its other rulemaking submissions, AGC continues to call upon OSHA to develop a proposed vertical hazard communication standard for the construction industry, and to conduct a truly open-minded rulemaking on such a proposal.

NFIB

National Federation of Independent Business

STATEMENT SUBMITTED BY THE
NATIONAL FEDERATION OF INDEPENDENT BUSINESS

Before: Senate Small Business Committee

Subject: Hazard Communication Standard

Date: August 3, 1989

Mr. Chairman, on behalf of the more than 570,000 members of the National Federation of Independent business (NFIB), we appreciate your inclusion of this testimony within the official record of hearings on the implications of the Hazard Communication for small business. Realizing that these were oversight hearings, we will point out difficulties small businesses are having under the standard -- particularly with regard to the technical requirements and the paperwork burden.

There are two levels on which one should view the small business of today in relation to the hazardous communication standard. One is in reference to the overall legal burden imposed on the business owner, and the second is specific to the multitude of requirements found under the Employee Right-to-Know law.

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First, let's tour the typical small business, from accounting to zoning regulation. In a given day, the small business owner deals with numerous subjects in which he or she is not an expert. For example, the firm owner may have to deal with complicated tax principles, inventory depletion,

The Guardian of Small Business

employee benefits filings, and negotiating with local ordinance drafters, even though he or she has only limited knowledge of these matters. The business owner also must think about amorphous concepts like "business good will" and effective media for advertising if he or she wants to keep the business going.

Then, the owner must deal with the overlay of environment, safety, immigration, and labor laws which regulate the way the business may be run. On the local level, there are water permits, municipal landfill licenses -- with garbage, rubbish and trash separation, air quality offsets, taxes, street maintenance, land use challenges, and other restrictions like parking space:customer ratios, and restroom facilities. On the state level, there are filing rules under the Community Right-to-Know law, various insurance guidelines, possibly mandated benefits or stricter worker laws, public access for the disabled requirements, transportation rules, and a variety of other laws which vary from state to state.

On the federal level, the number of laws and filings required of the business owner have multiplied tremendously since the 1960s. The business owner must check immigration status of all new employees. There are more restrictions under environmental laws passed by the federal government and implemented by the states, such as the small quantity generator rules, waste minimization, hazardous waste transportation and manifests, air regulations, and water restrictions under both the Clean Water Act and the Safe Drinking Water Act. Finally, there are the labor laws which directly affect hiring practices and worker safety laws under the Occupational Safety and Health Act, such as Form 200, and the Employee Right-to-Know or Hazard Communication Standard which we are discussing here today.

However, the Hazard Communication Standard has placed an enormous burden on the employer to toe the line in a regimented way -- though there may be a simpler, more effective way to impart the knowledge to the employees exposed to one or more chemicals present in the workplace.

Chemicals can be found in the "cleanest of facilities." Hardware stores, beauty shops, restaurants, and even professional offices are likely to have reportable substances on hand. The following activities comprise a partial checklist of what any employer who is not a manufacturer or processor of the chemicals can expect to do to get his/her HCS program running:

1. Read and review the law to determine its requirements.
2. Appoint a facility coordinator per operation and an overall corporate coordinator if more than one facility.
3. Make a list of ALL CHEMICALS USED IN THE BUSINESS because they are likely to need an Material Safety Data Sheet (MSDS).
4. Figure out what a MSDS is and set up a procedure with the purchasing agent to make sure all MSDS are received and filed.
5. Make sure that a copy of the MSDS or appropriate information is forwarded to the proper supervisors so that the appropriate employees are advised as to hazards.
6. Because the small business owner, NOT THE MANUFACTURER, is liable if his/her MSDS are not accurate or up to date, the owner must check each MSDS to make sure that the following are contained in EACH MSDS:
   - -- identity of chemical or compound.
   - -- name, address & telephone number of preparer.
   - -- date of MSDS preparation.
   - -- its physical and chemical characteristics.

-- exposure methods.
-- its physical hazards.
-- emergency first aid, if any.
-- its health hazards.
-- OSHA, PEL, ACGIH TLV, or any other exposure limit.
-- its carcinogenicity.
-- safe handling procedures.

7. Devise a system of review for incoming container labels after receiving MSDS to make sure they have the following information:
   -- chemical name.
   -- proper hazard warnings.
   -- immediate acute health alert and a summary of the MSDS.
   -- decipher the warning which may not be in words, instead relying on symbols, etc.
8. Develop and implement procedures for employee training upon initial assignment and when new information is provided, e.g., new chemicals on the premises or new MSDSs.
9. Set up a corollary recordkeeping system to show that each employee was trained and when.
10. Develop on-site notices for employees in the work area.
11. Post lists of chemicals in work areas with chemicals specific to that work area.
12. Create procedure and request for MSDS information for other employees not routinely exposed to obtain MSDS and training information.
13. PREPARE A WRITTEN HAZARD COMMUNICATION SYSTEM WHICH IS ALL INCLUSIVE OF PREVIOUS ITEMS AND EXPLAINS:
    -- how to identify hazards.
    -- hazard classifications.
    -- contractor policy.
    -- chemical lists.
    -- trade secret information.
    -- training.
14. Designate a hazard classification and warning system. Make sure all employees are well versed in each symbol.
15. If trade secrets are present, make available this information for medical emergencies. Also have a Confidentiality Agreement ready for non-emergency situations.
16. Create emergency preparedness drills and include them in the company's standard operating procedures manual (presuming the company has such an item).
17. Since the small business owner is now held liable for the health and safety of contractors who come onto the premises, all of the above must be communicated to the contractor.
18. Make sure that existing operating procedures comply with the OSHA requirements.

These requirements are the minimum. If the business owner is manufacturing or processing the chemical(s) in question, then the list becomes much longer.

Much of the complexity stems from the technical nature of the material. Although the manufacturer of the chemical is responsible for assessing the chemical hazards and listing these hazards on the MSDS, the owner must still have some knowledge of the chemicals so that s/he can translate them for the employees. Even reading the MSDS requires some basic knowledge of chemistry (See Attachment 1).

Second, listing the chemical inventory of the facility is not as easy as it sounds. Many business owners are likely to get caught in the trap of chemicals actually used in production or not and list too many--consequently making more work for themselves--or too few--running afoul of the law. Thus, a chemical used in cleanup may or may not be covered under the Hazard Communication Standard depending on how intrinsic to the production it is, e.g., blanket wash for a printer or carpet cleaner for a clothing boutique owner. Not all examples are this easy to define, nor are they clearly covered under consumer product provisions.

Third, many small businesses are not formal nor are they run by written operating procedures. Thus, the imposition of written training requirements are likely to constitute the most formal documentation on the premises. The development of such documentation will take many hours to complete and more hours to implement, i.e. training the employees.

Actual case histories of small businesses often speak louder than the organizations which represent them. Debra Demers of Manchester, New Hampshire, and Bill Peters of Russellville, Arkansas, make the case that the paperwork burden on small business owners is excessive under the Hazard Communication Standard (See Attachment 2).

In closing, NFIB appreciates the interest of the Senate Small Business Committee in reviewing this law, which has had and will continue to have a tremendous impact on the way American business is conducted. The Small Business Committee knows what it takes to keep a small business competitive, and NFIB encourages the Senators to look for less restrictive alternatives which assure the health and safety of employees without unduly burdening the small business owner with unnecessary paperwork.

0142Q

Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY *(As Used on Label and List)*

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name	Emergency Telephone Number
Address *(Number, Street, City, State, and ZIP Code)*	Telephone Number for Information
	Date Prepared
	Signature of Preparer (optional)

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)

Section III — Physical/Chemical Characteristics

Boiling Point		Specific Gravity (H_2O = 1)	
Vapor Pressure (mm Hg.)		Melting Point	
Vapor Density (AIR = 1)		Evaporation Rate (Butyl Acetate = 1)	

Solubility in Water

Appearance and Odor

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL

Extinguishing Media

Special Fire Fighting Procedures

Unusual Fire and Explosion Hazards

(Reproduce locally)

OSHA 174, Sept. 1985

Section V — Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable		

Incompatibility (Materials to Avoid)

Hazardous Decomposition or Byproducts

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur		

Section VI — Health Hazard Data

Route(s) of Entry: Inhalation? Skin? Ingestion?

Health Hazards (Acute and Chronic)

Carcinogenicity: NTP? IARC Monographs? OSHA Regulated?

Signs and Symptoms of Exposure

Medical Conditions
Generally Aggravated by Exposure

Emergency and First Aid Procedures

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled

Waste Disposal Method

Precautions to Be Taken in Handling and Storing

Other Precautions

Section VIII — Control Measures

Respiratory Protection (Specify Type)

Ventilation	Local Exhaust	Special
	Mechanical (General)	Other

Protective Gloves | Eye Protection

Other Protective Clothing or Equipment

Work/Hygienic Practices

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June 16, 1989

Senator Dale Bumpers, Chairman
Small Business Sub-Committee
United States Senate
Room 6243
Washington, DC 20510

Subject: OSHA Hazardous Communications Program

Dear Dale:

I am fed up! I have had enough! It seems as though the Federal Government is dead set on running my business! Why don't you just go ahead and nationalize our small independent businesses!

Case in point: The proposed OSHA Hazardous Material Communications Program which requires among other things, the training of our employees in handling this material. If this bill procedes and becomes effective, we will no longer be selling any kind of material under this category! THIS IS A FACT!

The Federal Government has caused the lawn mowers we sell to become more complicated, more unreliable, and more difficult to service! WE ARE GOING TO GET OUT OF THE LAWN MOWER BUSINESS!

The Federal Government has made gas space heaters more complicated, more unreliable, more difficult to install, more difficult for the customer to understand, and more difficult to service! WE ARE GOING TO GET OUT OF THE GAS HEATER BUSINESS!

You have created the same types of problems with wood heaters and other products as those mentioned above! It is becoming more and more difficult for small businesses to stay in business! We have had two small businesses go "belly up" within the last several days in Russellville!

Perhaps the aim of the Federal Government is to go in the opponite direction of those students who recently died in China. You are destroying in our country the very things that those Chinese students were seeking! If the Federal Government is intent on destroying small businesses through the vast requirements of paperwork now in place as well as those in Section 89, tremendous strides are being made towards that end!

I AM fed up! Something needs to be done to make it more simple and less expensive and time consuming to get along with the Federal Government in operating small businesses! Hopefully, our small 45 year old business will survive!

Cordially yours,

Bill Peters

Bill Peters

BP/lg

cc: Hal Marsolais
David Loving
Western Hardware Association
Arkansas Furniture Association
NARDA
[redacted]
U. S. Chamber of Commerce
Cotter & Company
Servistar Hardware
Speer Hardware
Senator David Pryor
Representative John Paul Hammerschmidt
Congressman Tommy Robinson
Congressman Bill Alexander
Congressman Beryl Anthony

AMOSKEAG ENTERPRISES INC.
(603)623-5738

June 21, 1989

NFIB
Suite 700
600 Maryland Ave. S.W.
Washington, DC 20024

Dear Sir:

"Current" magazine is a trade journal published by The New England Electrical Contractor's Association. Please read the enclosed copy of an article in their May-June issue in reference to the "HAZCOM STANDARD". I don't know how OSHA can expect a small business to comply with such a law, and still remain competitive. The cost of doing so would cause many small businesses to close their doors: not to mention the effects on the consumer. Or is this possibly the main goal of OSHA, and other such government agencies?

Furthermore, no one I have spoken to has been able to get any information from OSHA, on what they are expected to do to comply with the law. Supposedly, OSHA has a compliance package, but no one seems to be able to get it from them. Is it their plan to not make the information available to the small business, and then come back and fine them for not complying with a law that they have not been able to get information on?

Please fight this issue with all you've got. It could prove to be the number one enemy of free enterprise. If we think the cost of insurance is high, the cost of complying with such a law could be astronomical.

I am not against government regulations and fines pertaining to negligent employers, but I do not see the necessity of forcing employers who have not had injuries caused by negligent use of chemicals, to comply with this standard.

Sincerely:

Frank A. Demers

220 E. INDUSTRIAL PARK DRIVE 16
MANCHESTER, NH 03103

Dealing with OSHA's HazCom Standard

Construction industry fights OSHA's Hazard Communications Standard while it prepares for compliance with the new law

By Michael J. Harrington, Associate Editor Electrical Construction Technology

Many contractors are dreading the new year. If caught unprepared, they could be saddled with stiff fines or, possibly, even lose their businesses. Why? A new federal law — which the construction industry is alternately fighting tooth and nail to prevent and scrambling frantically to prepare for — is baring its teeth.

By January 1989, all construction industry, and other non-manufacturing, employers in the United States were expected to be in full compliance with the Occupational Safety and Health Administration's (OSHA) Hazard Communications Standard (HCS). Also called HazCom and the "Right to Know" law, it was designed, based on existing rules for the manufacturing industry, to reduce the incidence of chemical injury on the job. HazCom mandates that non-manufacturing employers develop a written hazardous communication program explicitly warning employees of toxic chemicals, collect accurate information about job site chemicals, and train employees to use this information.

Basically, this means that construction contractors, regardless of their size, will be burdened with setting up a detailed system of files on every job site providing every worker with detailed information about every chemical with which he may come in contact. The HazCom standard further asserts that employers exchange Material Safety Data Sheets (MSDSs) among other employers and train their employees about hazardous products used by other employers on a job site.

Failure to comply with the standard, which is the most significant OSHA rule this decade, can lead to maximum fines of $10,000. Non-compliance also carries significant liability implications. A single complaint of non-compliance by an employee or a third party can result in an inspection.

Industry backlash

The construction industry strongly opposes HazCom. "As it's currently written, the standard is going to throw this industry into turmoil," said American Subcontractors Association president M.R. "Mac" Sullivan Jr. The Construction Industry Hazard Communication Coalition, consisting of 33 national construction trade associations, was successful in preventing the standard from being implemented May 23, 1988. However, on November 28, 1988, the U.S. Court of Appeals for the third Circuit in Philadelphia, lifted the ban on enforcement of HazCom in the construction industry. The coalition is now considering an appeal to the U.S. Supreme Court.

At the same time the court rejected the construction industry's challenge, it also upheld its earlier decision that the Paperwork Reduction Act of 1980 did not apply to the HazCom Standard. The court ruled that the standard did not violate the paperwork act, because, while it requires employers to collect and maintain paperwork, it does not require the paperwork to be transmitted to a government agency.

The HCS law stems from the Occupation Safety and Health Act of 1970, adopted to alleviate some of the toxic dangers inherent to factory work. The standard has a long, bureaucratic history, involving federal agencies, a host of advisory committees and consultants, courts, congress, several labor unions, and various public interest groups. The upshot is that, in August 1985, OSHA decided to extend the hazardous communication rules to virtually everyone in the workplace. The first phase of the standard compelled manufacturers, importers, and distributors to supply labels for shipped containers of hazardous chemicals and MSDSs regarding the chemicals they shipped to non-manufacturing employers.

Most construction contractors find HCS impractical because of three traits common to the industry: few fixed work sites, transient work forces, and, most significantly, very few chemical-related incidents. According to Charles Murphree, senior project manager for electrical contractor W.B. Moore Co., "We've never had a chemical-related accident. Most of our accidents end up being back injuries from people not lifting properly, or minor cuts or sprained ankles. When handling potent acids, even before this law, we always exercised extreme caution. Personally, I don't see any benefit from the law," he said.

Because of the transient nature of the construction industry, and the fact that most construction is performed out of doors, or in well-ventilated areas, the coalition believes that to carry out all the steps of HCS would be unnecessary. An added concern is the cost of the new law. In addition to the possible fines, the coalition has determined that first-year compliance costs for the typical contractor will average $15,197 — considerably more than OSHA's $146 first-year estimate. Still another factor is determining how all the paperwork among the contractors and subcontractors is going to be coordinated and disseminated.

Contractor responsibilities in complying with the law include the following:

- Keep a written record at each site;
- Conduct a chemical inventory and develop lists;
- Inspect and maintain container labels;
- Make MSDSs available upon request;
- Exchange MSDSs on multi-employer work sites;
- Provide MSDSs for emergency response groups;
- Conduct employee training.

The hearing

Members from The Construction Industry Hazard Communication Coalition's steering committee — comprised of the American Subcontractors Association (ASA), the Associated Builders and Contractors (ABC), the Associated Specialty Contractors (ASC), and the National Association of Home Builders (NAHB) — met before OSHA on December 12, 1988. The thrust of the speakers' displeasure with the new law addressed the impracticality, expense, and ultimate

(Continued on page 24)

HazCom *(continued from page 11)*
futility of extending the law to non-manufacturers. Repeatedly, the speakers stressed that the construction industry was not opposed to the hazard communications, but rather wanted a better system for providing the information.

• Martin Perlman, vice president/treasurer, National Association of Home Builders: "We are in total agreement with OSHA that any worker who is exposed to hazardous chemicals while on the job is entitled to *relevant* and *understandable* information which will help to avoid injury from those hazardous chemicals . . . It is one thing to label products with appropriate precautionary measures to be observed during use. It is quite another to require all construction companies in the country, no matter how small, to maintain technical libraries on all job sites consisting of hundreds of Material Safety Data Sheets that do little more than tell us what the American conference of Government Industrial Hygienists thinks about the hazards of a particular chemical . . . the information is not only useless to a typical worker, but it overshadows the important information which should be conveyed to the worker.

"The ironic thing about the MSDS dispute is that we have *never* asked OSHA to do away with MSDSs. Employers can make this information available to employees on some reasonable basis. What we are resisting is OSHA's requirement that an MSDS collection be maintained on every construction site in the country. Given the large nature of covered chemicals and the complexities of the types of multi-employer work sites which predominate in our industry, this system simply cannot work," Perlman testified.

• Thomas J. Godwin, Jr., president, D&G Electric Co., and second vice president of the American Subcontractors Association, discussed the special problems which the MSDSs posed for the construction industry. "It is evident to every small business person in this country that OSHA did not adequately plan the implementation of the standard since the acquisition and comprehension of MSDSs makes full compliance next to impossible for small businesses," said Godwin. "One of the major problems with the standard, which I'm sure no one anticipated, has been the creation of MSDSs for thousands of products which pose little danger for anyone besides a small child . . . Currently, I have over 100 MSDSs on everything from batteries to hand cleaner. The problems are compounded by the meaningless OSHA consumer products exemption which makes it extremely difficult to determine if I'm using the products the same way as a consumer uses them. The type of person who is going to eat marking crayons or wallpaper is not the same person who will benefit from hazard communication. Having to train employees not to do such a thing is an insult to both employers and employees, and it undermines the purpose of hazard communication.

"My employees can come in contact with 10 to 30 other contractors on any given job site . . . masonry, drywall plumbing, mechanical, and painting contractors, just to name a few. None of us starts or finishes a job on the same day and employees are coming and going at all times during the project . . . where and how is the exchange of information going to take place? Where are the MSDSs going to be kept? Who's responsible for coordinating this exchange on multi-employer work sites? . . . The coalition urges OSHA to require MSDSs only on industrial products not available to consumers. They should be able to be maintained at a central office location or on a truck. This method has the backing of OMB [Office of Management and Budget] from a paperwork perspective, as well as the construction industry in our desire to develop a workable standard."

• William L. Nemeth, president, Louis Ebert & Son Painting Co., testified that he had spent approximately $5500 training his 20 painters about hazardous materials. He said that it takes four hours to instruct each new employee, but wouldn't guarantee how long an employee would retain the highly technical information. "We use labels on every product that leaves our warehouse, regardless of whether they are in the manufacturers' containers or bulk materials, which we have put in smaller containers. . . . Labels, both the consumer product type labels and the hazard identification type are written in simpler language than MSDS . . . Labels are easier to understand and, because they are immediately available where the work is being done, labels provide better useful information for employee protection. Nemeth cited a study performed by NAHB's Technology and Codes Department, in which labels on 20 products commonly used in construction sites were found, in many instances, to contain more useful information than the corresponding MSDSs.

How to prepare

The most difficult aspect of the new law is where to draw the line as to what's dangerous. Detergents, copy machine toner and other chemicals, wallpaper, wood dust, crayons, and other common chemicals are, for the most part, included under HCS. More common chemicals, such as household cleaning agents, are not — if employee exposure is limited to the amount likely in a domestic environment. According to Martin Perlman, "OSHA's definition of hazardous chemicals is extremely broad. The so-called 'one study' rule has resulted in an estimated universe of 575,000 covered chemicals. In our industry, that means everything from muriatic acid to Tidy Bowl . . . We have repeatedly stressed that OSHA create a *meaningful* exemption for consumer products . . . to distinguish our proposal from the "consumer products" exemption in the current rule, which is relatively meaningless."

The coalition also is distressed by OSHA's reluctance to supply enough education material about the standard. According to Godwin, "One year late, OSHA now has a compliance package, which has not been publicized and is difficult to order." Therefore, various industry-generated guidelines and training programs on how to prepare for HSC have been published. The American Subcontractors Association has issued "Hazard Communication: An Interim Guide for the Construction Industry," which it says is the only compliance manual recognized by OSHA. It is available from ASA for $15 (members) and $20 (non-members).

The National Electrical Contractors Association (NECA) published a document last May called "Hazard Communication: A Program Guide for Electrical Contractors" (Index No. 5047), which contains training procedures, a copy of the regulations, and sample written programs. The guide, which costs $5 for members, addresses the basic elements of the regulation. "But what it cannot address, because of the ongoing confusion, is what these regulations mean on the real construction site, where there's a

(Continued on page 26)

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(RI) Major Electric 401-724-7100

(ME) Standard Electric 207-942-6713

(VT) C.E.D./Twin State 802-295-3193

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HazCom *(continued from page 24)*

multi-employer problem," said Daniel G. Walter, director, services for NECA. "We've known from the beginning, that the implementation of the standard was inevitable. Our battle has been to try to make it livable. We've tried to deal with the multi-employer requirements, which not only are confusing and entail a tremendous amount of work, but for which OSHA hasn't provided clear answers. That's making it difficult to prepare," Walter said.

Because of the gap in HazCom education, compliance packages are also being generated by consultants. A training program package from the W.H. Brady Co., Signmark Div., includes a 200-page Implementation Manual, an employee Training Handbook, an 18-minute training video, a brochure, 20 employee training handbooks, two "Right-to-Know" wall posters, and a full-line catalog. The implementation manual is divided into 12 chapters, including "training program," "state laws," "labeling guidelines," "updates," "reports," "forms and letters," "hazardous material [illegible]," and "reference sources."

In testimony given before OSHA last September, the ASA, ABC, and NAHB called for OSHA to inform all employers of their responsibilities, similar to the effort made by the Immigration and Naturalization Service prior to enforcement of the new immigration law. According to these three major construction associations, there should be information through the media and direct mail to employers as well as a toll-free hotline for questions. The coalition also wants the standard's provisions to recognize how different industries operate, and for OSHA to enforce a standard system for MSDSs for legitimately hazardous products.

At presstime, NECA's Walter commented on the coalition's impact at the December 12th hearing. "OSHA hinted that they would sort of re-examine the requirements and somehow demand that the MSDS sheets be maintained only on hazardous materials, which, of course, are hard to define. . . . The problem is that there is no such thing as a typical site, with a centralized location. In addition, since the stay has been lifted, everyone's waiting for an OSHA announcement about enforcing the regulations to appear in the Federal Register. OSHA hasn't made that announcement yet, so we don't know when they'll start enforcing the standard," he said.

ASA second vice-president Godwin summed up the construction industry's concern about HazCom in a nutshell. "What we are saying is hazard communication will only work if there is planning and education, and a reasonable application to the industries affected."

(Reprinted with permission)

Water Heaters — Remodeling — Repairing — Trenching — Backhoeing

Jones Plumbing
619 Fourth Street
Telephone 532-2620
Berthoud, Colorado 80513

don't call

February 8, 1989

NFIB
Suite 700, 600 Maryland Ave. SW
Washington, D.C. 20024

Dear Sir:

In April 1987, one of our employees, Daniel Foote, was a very insecure person and taking counceling. His councelor advised him to do something to make him proud and important. He consequently called OSHA to the job-site on which he was also working. When OSHA showed up, Dan walked six miles back to town and quit his job. He was unemployed for quite a while and finally went to work doing the same type of work as we do. He married a lady much older than he and five weeks later committed suicide in July 1987.

The OSHA representative came to the job-site bringing his soil testing equipment with him. I have been in business here for 30 years and am well acquainted with the soils in this area. I was digging in sand stone and it was so hard I had to lay my track-mounted backhoe from side to side in order to loosen the ground in order to dig. Since the material was sand stone, and according to the OSHA handbook (copy enclosed) I was not required to slope the sides of the trench. The inspector tried in vain to test the soil with his equipment but it was too hard for his kit. He randomly picked up samples, not taking them from the road cut in which I was excavating. He sent them to a soils lab in Salt Lake City and they said the "soil" dissolved in water over a period of time. The trench we dug was dry and open only long enough to place the pipe and immediately backfilled. OSHA also used a report from Rocky Mountain Consultants in Estes Park but their test samples were taken from a higher elevation than we were in and they were taken west of our site. We contacted a Loveland Engineering firm who had taken samples from the location which we were in and they advised us that the ground was stable and did not need shoring nor sloping. He also confirmed that the soil would not rapidly disentigrate in open air.

After receiving citation and $850 fine from OSHA (copy enclosed) I called to inquire about proper procedure to contest their findings. I did so on April 24, 1987. I also returned a copy of a form that came with the citation. I presumed this was the "answer" they were requiring. After several more billings, I called Judge Goldstein many times and he agreed that I had several valid points. But since I had failed to send the "answer" according to him, it was too late. I told him I wanted a hearing but he said it was impossible because i "was in default."

Page 2

NFIB
Washington D.C.

I took this matter to my lawyer (illegible) but he didn't get too far either. I wrote to Re. Hank Brown, Senators Bill Armstrong and Tim Worth. They were all cooperative and replied but they all said there was nothing they could do. I sent a copy to NFIB in Ft. Collins, Co. and they suggested I sent the literature to you.

Osha says it is too late, but in my book, it is never too late to right a wrong. Could you please help us?

Thanks,

Sincerely,
JONES PLUMBING

Thomas C. Jones

jj
Encl.

NFIB MEMO

6/11/87

Charles Wickman
Whidden & Co.
P.O. Box 11863 (Winston, N.C. 27116)
or
1012 Applegate Court
Kernersville, N.C 27284
(919) 996-2115

Re: Request for info on Right to Know Hazardous Communication Act. (Reg)

Member has been in business for 6 yrs — Last 2 yrs. the right to Know laws have been killing him. Please send what we can to him on this.

JEANNINE ZIMMERMAN
554-9000

Washington, DC 20024

NFIB

July 30, 1987

Charles Hickman
Whidden & Co.
P.O. Box 11863
Weston, North Carolina 27116

Dear Mr. Hickman:

Thank you for phoning our office concerning the High Risk Occupational Disease Notification and Prevention Act of '87. I appreciated receiving your thoughts on the impact, if passed, this onerous legislation would have upon your business.

NFIB is similarly alarmed over the far reaching effects such a proposal would have upon small business. If enacted, this legislation would impose substantial economic burdens on nation's small businesses by mandating coverage of certain types of medical treatment as well as increasing already high costs paid by small employers for employee health coverage.

This legislation, introduced in both the House and Senate - H.R. 162 and S. 79 respectively, is on a fast track. Markup on these bills has already occurred and they are now awaiting floor action in each House. It appears that we are going to have an uphill battle on our hands. In addition to support from organized labor, a good deal of misunderstanding still exists within Congress as to what this legislation will actually accomplish. Some Members are under the impression that this proposal will prevent environmental spills or effect existing community right to know laws. NFIB is continuing to work with Members of Congress to educate them to the serious problems associated with this legislation for small businesses. Without the grassroot support of our members, though, this job will be impossible! I hope we can count on you, therefore, to contact your Senators and Congressman urging them to vote against these proposals.

Enclosed is a copy of the July Business Edge that features an article on this issue along with additional communications NFIB has initiated on this legislation. I hope it will prove informative. Please let me know if you have further questions.

Sincerely,

Sheila C. Hughes
Membership Liaison Representative

cc: Wayne Small

NFIB MEMO

7/27/87

Don Giger
Rt 6 Box 210
Dothan, Alabama 36303
(205) 983-4531

Re: High risk - Worker's Notification Legislation.

Member is concerned on the impact, if passed, this legislation would have on his business.

Claims he's not an "independent business" — as the government really runs his business. What decisions does he actually make — more & more the gov't makes the decisions. He really works for them.

He is in the energy testing business

JEANNINE ZIMMERMAN
554-9000

600 Maryland Ave. S.W.
Washington, DC 20024

Independent Business

NFIB

July 30, 1987

Don Giger
Rte. 6 Box 210
Dothan, Alabama 36303

Dear Mr. Giger:

Thank you for phoning our office concerning the High Risk Occupational Disease Notification and Prevention Act of '87. I appreciated receiving your thoughts on the impact, if passed, this onerous legislation would have upon your business.

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Sincerely,

Sheila C. Hughes
Membership Liaison Representative

cc: Justice Titlow
WNG/9244

NFIB MEMO

7/27/87

Marilyn Starr
Starr Fireworks
P.O. Box 291
Fargo, North Dakota 58107
(701) 293-6388

Re: OSHA Inspection

Member was visited by OSHA several wks ago. Has since received a notice from them fining her in violation of 5 items & fining her $5,500. Several seem rather picky. 1. a screwdriver on top of a work box — 2) a "screw" left on top of another box. 3) Incomplete labeling on containers. (This is real) — 4) 800 lbs of combustible items stored together. Our member claims these items are not compatible — together.

SHEILETTE ROBINSON
554-9000

I told her to request an informal hearing with the local office. — Write down all of ~~the~~ the points that she disagrees on. Also, to take an attorney with her if she thinks necessary. I offered to send her info on OSHA, & her rights —

Suite 700,
600 Maryland Ave. S.W.
Washington, DC 20024

(202) 554-9000

National Federation of
Independent Business

NFIB

July 27, 1987

Marilyn Starr
Starr Fireworks
P.O. Box 291
Fargo, North Dakota 58107

Dear Ms. Starr:

Thank you for phoning our office to inquire about an employer's rights during and following an inspection by the Occupational Safety and Health Administration.

I am sorry to hear that you had been recently issued a citation by OSHA for several safety violations. Your concern over being subject to pay a $5,500 fine for these seemingly minor violations is certainly understandable. An employer may request an informal meeting with OSHA's area director to dispute the charges. Through this channel the employer is often able to negotiate with the director to mitigate citations and penalties arising from the inspection. Thus, it is important that any questions or objections you may have regarding the alleged violations be brought up at this time.

To provide you with a better understanding of your responsibilities to this law, I have enclosed a section from the Bureau of National Affairs, Inc.: Employment Guide. It provides an overview of the Act. Also attached is a fact sheet prepared by our labor specialist that details an employer's rights during an OSHA inspection. Recently the Department of Labor released a new publication entitled, OSHA Inspections. It outlines the agency's response to imminent danger situations, worker complaints, employer's rights, the review process and other pertinent details that an employer should know. You may wish to request a copy during your informal hearing.

As you by now have discovered, the rules governing an OSHA inspection are extensive. Thus, it is difficult at times to apply a straight rule or regulation across the board. As a result, we recommend that our members contact us whenever they have questions or feel that their rights may have been violated during an inspection. In the meantime, I hope that my letter and enclosed information will prove useful.

Sincerely,

Sheila C. Hughes
Membership Liaison Representative

cc: Ron Klaswick
WNG/9229